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CONSTRUCTION.

THE London (Ca.) *Free Press* says that the railway link which is to connect Gravenhurst and Callendar is to be kept independent. This is a very important section, since it will give to a number of the railways the means of connecting with the Canadian Pacific at its eastern terminus. If any one company was allowed to control it all other companies would be placed at a serious disadvantage.

AT the monthly meeting of the directors of the Baltimore and Ohio Railroad Co., on the 9th inst., the president stated that arrangements had been made for the rapid prosecution of the line between Baltimore and Philadelphia, with the design of opening it at the earliest practicable period, and it was expected that contracts for all the heavy work would be offered in a brief time.

THE total length of the Great American and European Short Line Railway is about 764 miles, of which there are now completed (but owned by different parties) 308 miles, while 109 miles are under construction. The termini of the line are Montreal and Louisburg, Cape Breton. Application has been made to Parliament for a subsidy of $1,200,000 in aid of the project.

THE extension of the St. Louis and Cairo Railroad from East Carondelet to East St. Louis, a distance of five miles, will be completed during the month of May, when they will arrange to use the Relay depot in common with other roads entering East St. Louis, after which they propose making arrangements to reach the Union depot at St. Louis.

WORK is progressing on the two branches of the Southern Division of the Illinois Central Railroad, which the company is building in Mississippi. The Canton, Aberdeen and Nashville branch is now graded to Aberdeen and a large force is employed. On the Yazoo and Mississippi Valley branch track laying has been begun.

FIFTEEN hundred men are now working on the various sections of the Pittsburgh, Youghiogheny and McKeesport Railroad, and the construction is being pushed rapidly. The officials intend having the line open for business in the early part of July.

THE Warren and Farnsworth Valley Railroad will be extended during the summer to Balltown and Sherffs, where it will connect with a branch of the Pittsburgh, Bradford and Buffalo Railroad. It will open up for business the new Balltown oil territory.

IT is expected that through trains will be run by the Rochester and Pittsburgh Railroad Company from Rochester to Pittsburgh by the 15th inst. via the Low Grade division of the Allegheny Valley Railroad, with which they connect at Falls Creek.

THE track of the Northern Pacific Railroad is expected to reach Helena from the east and Missoula from the west by July 1, leaving a gap of only 130 miles to be ironed. Before September the line will stretch unbroken from Lake Superior to the Pacific.

THE branch of the Southern Pacific Railroad has been completed from Mohave, Cal., to the Colorado River on the Arizona border, a distance of 252 miles, and in a few days the Atlantic and Pacific Railroad will meet it there from the east.

THE track has been laid on the Clifton and Southern Pacific Railroad from Lordsburg, N. M., north ten miles. Grading is completed for thirty-five miles more, and there is material enough on hand to run the road for fifty miles.

THE Cincinnati and Eastern Railroad will be completed to Galena, Scioto County, Ohio, by the 15th of May, and to Portsmouth by the 1st of August. Contracts have been made for all the bridges and the steel rails to be used on the road.

CONSIDERABLE interest is felt in the proposed Kingfield and Portland (Me.) Railroad. The preference seems to be to connect it with the Sandy River Railroad at Fairbanks. The road will be two feet gauge like the Sandy River.

THE President has accepted another fifty mile section of the Northern Pacific Railroad in Montana. This section, which was recently completed, extends from the 550th to the 600th mile of the road west of the Missouri River.

THE Atlantic and Pacific Railroad, which extends from a junction with the Atchison, Topeka and Santa Fe Railroad near Albuquerque, N. M., through Arizona to Mojave is expected to be completed by the 1st of June.

THE Chattarol Railroad is now completed to Richardson, Ky., on the west fork of the Big Sandy, five miles southward from the old terminus at Peach Orchard, and forty-eight miles from the northern terminus at Ashland.

THE Pennsylvania Company propose this season to double their tracks between Crestline, Ohio, and Chicago, and add some twenty miles of double track west to the Pittsburgh, Cincinnati and St. Louis Railway.

THE Shamokin, Sunbury and Lewisburg Railroad, which is to connect the Reading system with that of the New York Central, will be put in operation May 15. It will be thirty-one miles long and cost $1,900,000.

THE Greeley, Salt Lake and Pacific Railroad, which is owned by the Union Pacific Railway Company, has been extended this year 6.7 miles to Pennsylvania Gulch, which is 14.2 miles west of Boulder, Col.

THE track has been laid on the Kansas City and Southern Railroad from Clinton, Mo., south four miles to Jordan's Springs. Grading is in progress between Jordan's Springs and Browningtон, five miles.

THE Central Pacific Railroad Company is pushing forward its branch line through Northern California to Oregon to compete for the trades of that region with the Northern Pacific.

THERE is a prospect that the St. Joseph Valley Railroad, which is now completed from Berrien Springs, Mich., to Buchanan, will be extended to St. Joseph this summer.

THE Illinois Central Railroad Company is raising the road-bed of the Springfield Division, laying it with steel rails and arranging it to connect with the new St. Louis route.

ENGINEERS are now engaged in surveying a line to some point on the Gulf coast for the extension of the Thomasville, Tallahassee and Gulf Railroad.

THE Wheeling and Lake Erie Railroad will be completed from Marietta Junction to Bowerston, a distance of about eighteen miles, the coming summer.

THE Southern Pacific Railroad Company has begun the construction of a branch line from Aptos to Loma Prieta to tap the valuable red wood forests.

IT is expected that trains will be running over the Ontario and Quebec Railroad from Sharbot Lake to Perth by the end of July.

THE Oregon Short Line Railroad has been completed to Hayley, 279 miles, leaving 200 miles of road yet to be built.

THE extension of the Kentucky Central Railroad will be completed to Richmond by the 1st of July.

INCORPORATION.

THE Atlantic Highlands and New York Railroad Company has been organized under the General Railroad Law of New Jersey, with a capital of $100,000, divided into 1,000 shares of $100 each. The incorporators are John S. Applegate and Joseph A. Throckmorton, of Red Bank; Rev. John C. Nobles, Rev. James E. Lake and Somers T. Champion, of Atlantic Highlands, and Richard A. Leonard and Thos. H. Leonard, of Leonardville. John S. Applegate has been elected president; Thomas H. Leonard, treasurer, and Edward Bowne, secretary. The company will at once build a road from Atlantic Highlands to Hopping's Station, on the New Jersey Southern Railway, thus making through connections to New York and Philadelphia. The estimated cost of the road, which will be three miles in length, is $40,000. Next fall it will be extended from Hopping's Station to Middletown, where it will connect with the New York and Long Branch Railroad.

ARTICLES of incorportion were filed with the Secretary of State of Minnesota on the 3d inst. of the Minneapolis, St. Paul and Seacoast Railway Company, with a capital of $15,000,000. The incorporators are Alexander Ramsey, W. W. Kettson, H. H. Sibley, of St. Paul; Richard Chute, A. B. Nettleton, Judson N. Cross, of Minneapolis; E. H. Thayer, Q. S. Stacy, of Iowa; Ralph Haumb, Scranton, Ill., and J. D. Harvey, of Chicago. The road runs from Minneapolis, by way of St. Paul, striking the southern boundary of the State in Fillmore County and the Mississippi River at Canton, Iowa. The following are the officers: Alexander Ramsey, president; A. H. Thayer, vice-president and general manager; H. H. Sibley, treasurer; J. N. Cross, secretary and general solicitor.

ARTICLES of incorporation have been filed in the office of the Secretary of State of Indiana of the Atlantic and Mississippi Railroad Company. The capital stock is fixed at $200,000. The directors are: John Higgins, John M. Boyd, Peter A. Huffman, Richard Neptune, John C. Farber, George M. Wilds and Samuel Harding. It is proposed that the road shall run from the Ohio State line at the southeast corner of Union township in Adams County to the most eligible point on the Illinois line within three miles of the southwest corner of Eugene township in Vermillion County, passing through the counties of Adams, Wells, Huntington, Grant, Howard, Tipton, Clinton, Boone via Thornton, Montgomery, Fountain and Vermillion. The line is to be 150 miles in length.

ORGANIZATION.

THE stockholders of the Freehold and Jamesburg Agricultural, the Pemberton and Seashore, and the Philadelphia and Long Branch railroad companies held their annual meetings in Camden, N. J., on the 1st inst., and elected directors as follows: Freehold and Jamesburg Agricultural: Strickland Kneass, president; H. Allaire, B. S. Buckalew, Alexander M. Fox, James R. McClure, A. R. Oviatt, Lewis Perrine, Jacob B. Rue, Clifford S. Sims, Edmund Smith, and Henry D. Welsh. Pemberton and Seashore: Strickland Kneass, president; George M. Dorrance, W. L. Elkins, Edmund Smith, Alexander M. Fox, B. S. Buckalew, H. H. Houston, Wistar Morris, N. P. Shortridge, Henry M. Phillips, Henry D. Welsh, N. P. Wetherill, and E. T. Green. Philadelphia and Long Branch: George M. Dorrance, president; Alfred L. Dennis, Warren E. Dennis, F. Wolcott Jackson, C. R. Thurston, Robert E. Pettit, W. J. Sewell, B. S. Buckalew, Geo. R. Roberts, Alexander M. Fox, Edmund Smith, Strickland Kneass, and Henry D. Welsh.

AT a meeting of the directors of the New York Central and Hudson River Railroad Company, the Lake Shore and Michigan Southern Railway Company, and the Michigan Central Railroad Company, held in this city on the 4th inst., the following officers were elected: New York Central and Hudson River Railroad Company—Chairman of the board of directors, Cornelius Vanderbilt; president, James H. Rutter; first vice-president, Charles C. Clarke; second vice-president, Chauncey M. Depew; third vice-president, J. H. Hayden; assistant to the president, J. Tillinghast; treasurer, R. V. W. Rossiter; comptroller, Isaac P. Chambers; secretary, E. D. Worcester. Lake Shore and Michigan Southern Railway Company—Chairman of the board of directors, William K. Vanderbilt; president, John Newell; vice-president, secretary and treasurer, E. D. Worcester. Michigan Central Railroad Company—Chairman of the board of directors, Cornelius Vanderbilt; president, H. B. Ledyard; vice-president, E. D. Worcester; treasurer, Henry Pratt.

AT the annual meeting of the stockholders of the New York, Susquehanna and Western Railroad Company, held in Jersey City on the 3d inst., the following directors were elected for the year ending May 1, 1884: Frederic A. Potts, Simon Borg, Charles Minzesheimer, William S. Dunn, S. V. White, R. S. Chapel, R. K. Dow, John L. Farwell, Henry Marks, Garrett A. Hobart, John I. Blair, Charles Seidler, and Henry P. Talmage. Frederic A. Potts was chosen president, W. S. Dunn vice-president, C. V. Ware treasurer, and John P. Rafferty secretary.

THE officers of the Rapid Transit Railway Company, of Staten Island, elected on the 28th ult., are: Adolph L. King president, Frederick White vice-president, J. F. Emmons treasurer, Theodore E. Leeds secretary. Charles E. Quincy, Alfred E. Boardman and Henry Cowan, the latter of Glasgow, Scotland, were elected directors, after the resignations of Erastus Wiman and W. W. MacFarlane were accepted. Mr. Wiman resigned to become president of the Staten Island Railroad Co.

AT the annual meeting of the stockholders of the Chicago, Burlington and Quincy Railroad Company, held in Chicago, Ill., on the 25th ult., the following directors were unanimously re-elected: John M. Forbes, Sidney Bartlett, Chas. J. Paine, John L. Gardner, Jr., Wm. Endicott, Jr., and Edward Bangs, of Boston; T. Jefferson Coolidge, of Manchester, Mass.; John N. A. Griswold and Peter Geddes, New York; Wirt Dexter, of Chicago and C. E. Perkins, of Burlington, Iowa.

THE directors of the Louisiana and Missouri River Railroad Company, elected on the 3d inst., are: R. P. Tansy, St. Louis;

William H. Mitchell, John Craven, and George Strout, Chicago; John J. Mitchell, St. Louis; H. V. P. Block, Pike County, and Col. Williams, of Howard County. The directors subsequently elected R. P. Tansy president, William H. Mitchell vice-president, Charles H. Foster, Chicago, secretary and treasurer, and F. A. Wann assistant secretary.

At a meeting of the stockholders of the Delaware and Hudson Canal Company, held in this city on the 8th inst., the following gentlemen were elected managers for the ensuing year: A. A. Low, J. M. Halstead, L. B. Cannon, J. R. Taylor, Thomas Dickson, J. J. Astor, R. S. Hone, James Roosevelt, A. R. Van Nest, H. J. Jewett, David Dows, R. M. Olyphant, and Thomas Cornell. At a subsequent meeting of the managers Thomas Dickson was unanimously re-elected president, Robert M. Olyphant vice-president, Coe F. Young general manager, James C. Hartt treasurer, F. M. Olyphant secretary.

At the annual meeting of the Burlington and Lamoille Railroad Company, held at Burlington, Vt., on the 30th ult., the following board of directors was elected: F. M. Van Sicklen, D. C. Linsley, George L. Linsley, Cyrus M. Spaulding, Morillo Noyes, and Lawrence Barnes of Burlington, Waldo Hingham of Hyde Park, George W. Hendee of Morrisville, Henry Smile of Cambridge, L. B. Howe of Jericho, Josiah Tuttle of Essex and L. F. Terrill of Underhill.

The election of officers of the Iron and Metal Exchange, held on the 1st inst., resulted as follows: Edward P. White, president; M. B. Flynn, vice-president; T. Delafield, treasurer; Carl Mayer, John T. Williams, Allston Gerry, J. H. Whitney, D. Houston, William Hagan, E. A. Caswell, J. G. Sibbard, H. B. Moore, William P. Tilton, George V. Tompkins and A. G. A. Harnickell, managers. This is the final act in the consolidation of the Exchanges.

At the recent annual meeting of the Northern and Northwestern Railroad Company, held in Hamilton, Canada, the following gentlemen were elected directors for the ensuing year, namely: John Stewart, John Proctor, W. Hendrie, Edward Gurney, Samuel Barker, M. Leggat, Ald. Sir Thomas Dakin, London, Eng.; Charles Bischoff, London, Eng.; James W. Barclay, M. P., Forfarshire, Scotland.

At the annual meeting of the Lake Shore and Michigan Southern Railway Company, held at Cleveland, Ohio, on the 2d inst., the following directors were elected for the ensuing year: William H. Vanderbilt, Cornelius Vanderbilt, William K. Vanderbilt, Augustus Schell, Samuel F. Barger, John E. Burrill, Darius O. Mills, Edwin D. Worcester, John Newell, William L. Scott, Charles M. Reed, Rasselas Brown, J. H. Wade.

At the annual meeting of the Central Ohio Railroad Company, held at Columbus, Ohio, on the 25th ult., the following gentlemen were elected directors: Orland Smith, J. H. Collins, Isaac W. Hall, Bradford Dunham, Joshua G. Harvey, Robert Garrett, David Lee, Joseph R. Swan, W. B. Brooks, Daniel Applegate, Joseph W. Jenkins, William H. Clements and Osmund Latrobe.

At the annual election for directors of the Central Railroad Company of New Jersey, held on the 11th inst., the following gentlemen were chosen: Henry S. Little, John Kean, Franklin R. Gowen, Edward C. Knight, Robert Garrett, Sidney Shepard, Theodore F. Randolph, Samuel Sloan and J. Kennedy Tod.

The second annual meeting of the United States Car Co., in which Boston parties are largely interested, was held in Concord, N. H., on the 8th inst., when the following directors were re-elected: Matthew Van Wormer, Simeon Brownell, Frank Brownell, Emery M. Mayo, F. D. Adams, Lloyd W. Pennell, Alden P. Jacques, Henry Baldwin, Edward C. Bryant.

At the annual meeting of the stockholders of the Eastern (N. H.) Railroad Company, held at Portsmouth on the 1st inst., the following board of directors was elected: Moody Currier, Dexter Richards, Francis Thompson, Edward L. Giddings, Edward A. Abbott, William H. Goodwin. Moody Currier was chosen president, and William Hackett clerk.

At the annual meeting of the stockholders of the Wilmington and Northern Railroad Company, held at Reading, Penn., on the 7th inst., the following directors were re-elected: Henry A. Dupont, of Wilmington; George Brooke, of Birdsboro; Charles Huston, of Coatesville; A. L. Foster, of Wilmington; Richard Ely, of New Hope; Charles Wheeler and John Gerhard, of Philadelphia. H. A. Dupont was elected president, P. S. Ermold, of Reading, secretary and treasurer, and J. H. Thompson, of Coatesville, general superintendent.

At the annual meeting of the stockholders of the Indiana, Bloomington and Western Railway Company, held on the 8th inst., the following directors were elected: J. Rogers Marshall, John L. Farrell, George E. Leighton, F. W. Peck, Charles Stanford, Robert K. Dow, Henry W. Marshall, Joseph Dow, J. R. C. Sherwood, F. W. Dunton, Alfred Tully, Austin Corbin, James B. Edmunds.

At a meeting of the stockholders of the Western Car Company, held in the Drexel Building, this city, on the 1st inst., the following gentlemen were elected directors for the ensuing year: P. Perkins, Charles T. Win, Joseph W. Drexel, E. L. Hinman, and James L. DeVou. The officers are: President, T. Lovejoy; vice-president, Anthony J. Thomas; treasurer, J. P. Curtis.

The officers of the New York Petroleum Exchange, elected on the 8th inst., are: President, L. H. Smith; first vice-president, W. H. Johnson; second vice-president, D. R. Offley; treasurer, Henry M. Curtis; secretary, William Fisher. The Exchange was reported to be in a prosperous condition. Its membership now numbers 432. The surplus in the treasury amounts to $25,000.

At a meeting of the stockholders of the Manchester and North Weare Railroad Company, held at Manchester, N. H., on the 7th inst., Jesse Gault, Charles F. Balch, Benjamin A. Kimball, Charles Chase, J. Thomas Vose, E. C Shirley and William J. Hoyt were chosen directors. The directors organized with Jesse Gault as president and Nathan P. Hunt clerk.

At the annual meeting of the Michigan Central Railroad Company, held at Detroit, Mich., on the 3d inst., the following directors were elected: Wm. H. Vanderbilt, Cornelius Vanderbilt, Augustus Schell, Samuel F. Barger, Wm. K. Vanderbilt, Edwin D. Worcester, Anson Stager, Wm. L. Scott and Henry B. Ledyard.

At the annual meeting of stockholders of the Franconia Iron Company, held at Concord, N. H., on the 2d inst., the following directors were chosen: L. D. Stevens, T. H. Ford, Sylvester Marsh, Edward Spalding, C. H. Amsden, E. S. Nutter, Charles Williams, C. H. Greenleaf, B. F. Caldwell, J. A. Stover.

The directors of the Burlington and Lamoille Railroad Company organized on the 1st inst., by the choice of the following officers: D. C. Linsley, president; Cyrus M. Spaulding, vice-president; E. W. Peck, clerk and treasurer; George L. Linsley, general manager.

The directors of the Rhode Island Locomotive Works have elected the following officers for the ensuing year: President, Charles Felix Mason; vice-president, Earl Philip Mason; treasurer, Wm. P. Chapin; secretary, Arthur Livingston; agent, Wm. H. Fenner, Jr.

The stockholders of the Nantasket Beach Railroad Company held their annual meeting in Boston on the 3d inst., and elected the following board of directors: J. B. Moors, J. L. Curtis, George R. Eager, A. W. Moors, George L. Keyes.

The directors of the Sunbury and Lewistown Railroad Company, elected on the 7th inst., are: Aaron Fries, James H. Campbell, Josiah Hart, Samuel G. Lewis, John W. Moffly, Geo. Shannon, and Stephen Greene.

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WE invite railroad officers to send us notice of elections, transfers, appointments, resignations, etc.; and all our readers would oblige us by furnishing us with any items of news which may come to their knowledge and are of a suitable nature for our columns. It is our intention to publish monthly full and accurate information regarding those enterprises and industries to which the AMERICAN RAILROAD JOURNAL is devoted, and to effect this end we solicit the co-operation of readers interested therein. We aim specially to record all new railway enterprises in the United States and Canada, and to note the progress of construction on all new roads and extensions; and we request those concerned in railway building to give us early information concerning the above, that our reports may be as complete as possible.

NEW YORK, MAY, 1883.

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OUR last number presented an improvement in the makeup and appearance of this paper, and explained the change from its being a weekly to a monthly publication. In the present issue we report that the office of the publishers is now at No. 245 Broadway, New York, than which no site more eligible can be found. Within a few feet of the post-office, and in the immediate neighborhood of all the leading newspapers of the metropolis, the present location of the publishers and editors of the AMERICAN RAILROAD JOURNAL is all that is desirable in convenience and accessibility to the sources of information.

THE WITHDRAWAL OF RAILROAD OFFICIALS.

WILLIAM H. VANDERBILT has seized upon the occasion of the annual election for officers to retire from the presidency of the New York Central and Hudson River Railroad Company, the Lake Shore and Michigan Southern Railway Company, and the Michigan Central Railroad Company; and his son CORNELIUS VANDERBILT was chosen as Chairman of the Board of Directors, with JAMES H. RUTTER as President, of the New York Central and Hudson River; WILLIAM K. VANDERBILT (who is also President of the New York, Chicago and St. Louis Railway) as Chairman of the Board of Directors of the Lake Shore and Michigan Southern, with JOHN NEWELL as President; and CORNELIUS VANDERBILT as Chairman of the Board of Directors of the Michigan Central, with H. B. LEDYARD as President.

The elder Mr. VANDERBILT succeeded to his prominent position as comptroller of the Vanderbilt system of roads upon the death of his father, some years ago; although he had been a prominent officer and concerned in the management for more than twenty years. He is not borne down with weight of years; but common rumor states that he is suffering from an incurable infirmity which requires that he shall abstain from active business pursuits. His mental faculties are believed to be as good as at any previous time; and his retirement is an entirely voluntary act—mainly, it would seem, dictated by the requirements of his bodily health.

Mr. VANDERBILT'S father gained the distinction of having acquired within his lifetime the largest fortune ever accumulated on this continent by peaceful methods. There was a time when the late A. T. STEWART would have been accounted a wealthier man than the senior VANDERBILT; but before the death of the railroad magnate, partly by the great rise in value of railroad property, and partly by injudicious landed investments by the merchant, there can be no doubt that Mr. VANDERBILT must have passed him in the race of accumulation. His son has simply maintained and perpetuated the pre-eminence won by his father. It is no common distinction, in a country where wealth is contended for so strenuously, and where it constitutes by far the most attractive prize for ambition, and stands as a measure of success, for any one to have inherited a fortune of fifty millions, which, in the course of ten years' time, he has doubled into a hundred millions. A hundred millions, chiefly of personal property, is a fortune so colossal as to have few parallels in any country, and in none where it is the result of but little more than one person's achievements. His sons, grandsons of the Commodore, are now to step into the distinctions and responsibilities of office. During their earlier years much has been pre-

dicted for them by admiring friends; and it now remains to be seen whether the third generation will have the wisdom, self-denial and courage to hold on to the accumulations of the first and second. They rest under a disability in the fact of having had rich men for father and grandfather; but, as in the case of the Astor family, this is not conclusively against them.

A few weeks ago common report stated that JAY GOULD was building a yacht in which to make a cruise around the world; and that he was, at the same time, to abandon active Wall street business in favor of his son. Mr. GOULD'S career has been even more phenomenal than that of either of the Vanderbilts, and reads to all the world more like a story from the Arabian Nights Entertainments, than the plain prose of current history. Mr. GOULD'S accumulations rank second only to those of Mr. VANDERBILT; his fortune being rated in the neighborhood of fifty millions of dollars; but this stupendous sum has been gained almost wholly since the beginning of the war, or a little more than twenty years. He is still a young man, under fifty. So far as can be discovered from external evidences, his health, strength and mental vigor, though never conspicuous, are as good as ever. He is by far the largest stockholder in the Western Union Telegraph Company, and the Wabash, St. Louis and Pacific, and the Missouri Pacific railway companies, with their dependencies and affiliations; besides being a large stock and bond holder in the New York, Lackawanna and Western Railway Company. He is conceded to be the most brilliant, nimble and enduring speculator that has ever appeared in the whirlpool of Wall street operation. In spite of the predictions of his downfall, based upon the experiences of his predecessors in the same field—Messrs. TOBIN, LOCKWOOD and DREW—he shows no sign of succumbing; but, on the contrary, acquires more and more power; and so long as he retains his faculties and his capital, he can continue to add to his enormous possessions. It is not unreasonable to suppose that he may yet surpass the Vanderbilt fortunes should he aspire to do so.

Rumor credits HUGH J. JEWETT, another of the Trunk Line managers, with a disposition to retire on account of failing health. The pressure and strain of railroad management wear out, inevitably, the strongest man.

The late THOMAS A. SCOTT, it is well known, hastened his death by devoting his extraordinary energies to the business of the Pennsylvania Railroad Company. His labor was incessant, and his recreation *nil*. The result was an untimely decay of powers, and a premature grave. His was perhaps an extreme, but not an uncommon, instance of the drain every day made upon the energies of a railroad president. The growing demand for strength is out of all proportion to the innate power of the human faculties. The president of a Trunk Line and branches, in these days, requires the comprehensive grasp of mind of a statesman, with the attention to details of the general of an army. Few of them can stand the strain; only those of a remarkable physical and mental organization can endure it for an extended period. Such is the competition of business that it becomes a veritable race for life—a contest in which the shrewdest minds and toughest bodies win. The revenues to be collected and expended exceed those of some kingdoms and empires. The number of men employed exceeds those of many great armies. These have to be kept at work and, in many instances, fed, clothed and sheltered. The requirements of motive power are more exacting and complicated than the commissariat and ordnance for an army, while the necessary efforts to preserve the peace, and to patch up and prevent the constant drift into ruinous war, are akin to the efforts of statesmen and counsellors in their diplomacy—to say nothing of their collisions with legislative bodies.

The railroad system of the country shows an inherent tendency to gather itself into great groups which may be called systems—after the analogy of the human circulation—and all the so-called independent lines find it for their advantage, and sometimes necessary for their preservation, sooner or later, to ally themselves with one or other of the great systems near them. Some of these systems reach as high as 6,500 miles of railroad, while several of them run between 2,500 and 5,000. To keep 5,000 miles of railroad in operation requires about 1,000 locomotives, 25,000 cars, and a working force of 25,000 men, with an expenditure of from $10,000,000 to $15,000,000 per annum for labor and current supplies, exclusive of the large amounts required for construction and improvements. This vast system of industry has grown up within fifty years—the greater part of it within twenty-five years—so that much of it has been placed in the control of young men whose apprenticeship could not have been extended. "Young men for action, old ones for counsel," says the proverb. The older and sager officers naturally climb to the top positions. By the time a man becomes president or vice-president of a great railroad company he must have spent many years in arduous labor, and is nearly worn out.

Take the generals of an army: they are the survivors of many struggles. The College of Cardinals is careful to select an aged member of their body for the popedom, partly on the ground that old men are likely to be conservative and keep things about as they find them, and partly because the probability of an early demise gives every one of the electors a better chance for the succession. Very different is the course of procedure in regard to the railroad presidencies. As a rule, favoritism can do but little. The fittest only survive, the weaker vessels go to destruction. Let no man envy the lot of a railroad president; for he is doomed to a life of incessant toil. Unlike the generals of an army, the kings and the national presidents, his name is seldom handed down to posterity upon the pages of history; nevertheless, many of them exhibit by their achievements a talent and a genius which should entitle them to more than military renown and honorable mention. In exchanging them for the feudal barons and principalities of three centuries ago, civilization has made a great advance. The same men who are now so conspicuous in the walks of trade, commerce and transportation would, if the genius of their times had called for it, have been equally conspicuous in the terrible arts of despotism, war and destruction.

PASSENGER TARIFF.

WHILE much is being written on freight tariff, but little, if anything, is written or said on the question of passenger tariff. When railroads cannot agree as to the rates for freight, they can appeal to a railroad commission and all come into line for a uni-

form rate. When the rates are too high, merchants can combine; and such is their power when they form a combination that the railroads are forced to accede to their demands. But, regarding a passenger tariff, a combination of passengers is rarely formed. When the fare from a terminus to a given place is too high, the passenger, instead of uttering a protest, quietly gives up his home and moves to another locality where he does not have this difficulty to contend with. In regard to the convenience of the time on which a train is run, passengers are more outspoken, and do not hesitate to circulate petitions for signatures, which, when ready, are sent to the proper officials, and, in many cases, the petitioners gain their point.

Now the question of a passenger tariff is, in some respects, a more difficult problem than that of a freight tariff. It is made still more difficult from New York City to the small places circling the city, from the fact that rents are so high in the metropolis that the railroad officials know that a certain proportion of men doing business here must live elsewhere. New York provides the best homes in the world for the very rich and the very poor, but comparatively *no* homes for the great middle class. Hence it is argued that this middle class—too proud to live with the poor, and too poor to live with the rich—will seek homes in some suburban town, where they can be placed on an equality. Such ought to be the case, but the facts prove the contrary. In New York City are thousands of families living from hand to mouth, that ought to live in these suburban towns. Many reasons are urged why they do not, such as malaria, mosquitoes and the attractions of a city life.

Now, as there is malaria and as there are mosquitoes in New York city, and as there can be attractions in every suburban town, the true reason must be found outside of those reasons above given, and *is* found in the passenger tariff and the system of running local trains.

Take the New York, Lake Erie and Western Railroad as an illustration. This road issues three classes of tickets for its passengers to these suburban towns. We will take Passaic as the representative town, because a number of the railroad officials live there, the present Mayor of Passaic being the treasurer of the Erie.

Now, from New York to Passaic the road has what it calls a local tariff, an excursion tariff and a commutation tariff. The local tariff is forty cents, or over three cents a mile; the excursion tariff is fifty-five cents, or over two cents a mile; the commutation tariff, if made in one payment, is sixty-two dollars a year, plus seven per cent interest, or sixty-six and 44-100 dollars. If a commuter travel every day, Sundays and holidays included, he is carried for about eighteen cents a day or a little less than one cent per mile. This would not be so great a hardship (though the rate is too high) were it not that the commuter is obliged to pay the sixty-two dollars in *one* payment. When a man is unable to make this payment at one time, the road makes a scale of payments for him, beginning with eight dollars for the first month and ending with three and 85-100 dollars for the twelfth month. If the commuter buy his twelve monthly tickets consecutively, he rides over the road almost as cheaply as though he made the payment in one sum for the year. But, in order to accomplish this end, he must buy for twelve *consecutive* months. If, after paying eight dollars for the first month, $7.15 for the second month and $6.25 for the third month, he is called away on business for a month, he is obliged to commence all over again by paying eight dollars for his next ticket. If the man, when at home, travels every day, Sundays and holidays included, it will cost him about twenty-four cents a day. But very few commuters travel *every* day. A large proportion of them do not travel on Sundays and holidays, and are absent from home more or less at other times. The average commuter does not travel over the road more than two hundred and fifty days out of the three hundred and sixty-five, hence the cost to him amounts to over twenty-six cents a day. This is altogether too high. A man doing business in New York and living in Passaic should be carried back and forth at an expense of not more than eight cents each way.

There is another annoyance to which commuters are subjected, and against which they ought loudly to protest, and that is the present style of ticket, which has to be punched by the conductor on each trip and renewed every month. Some system like the old fashioned system of the season ticket, good for three months, ought to be introduced, such ticket to be good for any number of rides for the period specified. Then, if a commuter lost several days by absence from home, he would not feel his loss, because he could go to the city in the evening without paying extra fare, and this would be a compensation.

It seems to this JOURNAL that the time has come when the railroads must pay more attention to local traffic than they have done. This attention must exhibit itself in a tariff that, added to house rent will make it cheaper for a man to live in a suburban town than in the city. It must be shown in the issuing of a ticket that will enable a commuter to ride over the road as many times as business or inclination prompts. It may have to go still further and give a man who builds a house costing twenty-five hundred dollars a free pass for two years, and a man who builds a house costing four thousand dollars or more a pass for three years. The railroad that first institutes a liberal policy in this respect will be the most favored and prospered regarding its local traffic.

THE OPENING OF THE NATIONAL RAILWAY EXPOSITION.

IT is needless to remind our readers, after all that has been published in these columns for several months past, that the great National Railway Exposition will be opened at Chicago on the 24th inst. Nor is it necessary to recount the various attractions which are offered, and which are well calculated to draw together not only from all parts of our own country but also from abroad, a vast assemblage; for these, too, have been printed by us from time to time as they came to our notice. It will be gratifying, however, to those who contemplate being present to learn that ample provision has been and is being made for their entertainment as well as enjoyment, and that a register of hotels, boarding houses, etc., with rates of charges, etc., will be kept at a convenient place for the inspection of visitors. It may not, however, be amiss here, even though it should prove to be a repetition of what had been previously mentioned, to state that among the exhibits will be the little

locomotive "Rocket," built in England more than fifty years ago. This will be placed alongside of the ponderous and most perfect machines of the leading builders of the present day, among which will be the largest locomotive ever built, weighing over seventy tons, and fitly called the "Mastodon." At the same time there will be exhibited one of the earliest built passenger cars, which has recently been undergoing repairs by its builders, in contrast with the superb drawing room, dining and sleeping cars of the most accomplished workmen of the year in which we live. There will also be an electric railway constantly running; and most of the electrical and other signal systems will be shown in operation every day. It would be impossible to reherse here all the attractive features of the Exposition. People should go to it and see for themselves. There is no limit to the means of reaching Chicago from all points cheaply and expeditiously, and we opine that there will be scarcely any limit to the people who will avail themselves of the opportunity thus offered for recreation, instruction and profit.

In Ceylon it was only a short time ago that a practical line of railway from the lowlands to the interior was laid down. For about fifty miles the bed is almost level, but in the next twelve miles of road, where the country is very mountainous, the gradient is a constant of one in forty, with frequent sharp curves of small radius besides. To take an ordinary train over this latter portion of the road two locomotives are required in the ascent, and a full and liberal application of the brakes in the descent. The tear and wear in the working of this line are consequently enormous, and it would seem that a great saving would be at once attained if the light American instead of the heavy English railway system were adopted.

The Secretary of the Interior at Washington has rendered a decision in which he approves the map of definite location of the Northern Pacific Railroad through the Rocky Mountain Division, filed July 6, 1882. The line so approved departs from the line of general route at Galatin City, and unites with it again at the Little Blackfoot. One effect of the change between these two points is to shorten the line about forty-three miles. It will also have the effect to release from the land grant and restore to the public domain more than a million acres of land.

The American Savings Bank was organized in this city on the 7th inst., by the election of A. B. Hepburn, late Superintendent of the Bank Department as president, William L. Strong as first vice-president, Frederick Billings as second vice-president, William Irvin as secretary. The Savings Bank building is at No. 501 Fifth avenue, corner of Forty-second street, and will open for business on the 21st inst.

Henry R. Worthington, having removed on the 1st inst. from 239 Broadway to his new offices and warerooms 86 & 88 Liberty street and 145 Broadway, New York, now has increased facilities for meeting the demand for his smaller classes of pumps, as well as improved accommodations for his Water Works business.

The Lake Superior and Northwest Railroad Company was organized at Duluth, Minn., on the 7th inst., with a capital stock of $5,000,000. The road will run from Duluth to Red River, at the mouth of Red Lake River, and will have various branches.

The Molecular District Telegraph and Telephone Company was incorporated in this city on the 5th inst. The proposed route of the line includes New York, Albany, Boston, Long Island and through New Jersey to Philadelphia.

PERSONAL.

The President has appointed Isaac Brandt of Iowa, Wm. Dean of Minnesota, and John Kelly of Oregon, a commission to examine twenty-five miles of the Northern Pacific Railroad on the Missoula division of that road, in Montana Territory. He has also appointed Albert Ordway of Washington, G. Pomeroy Keese of New York, and Aaron H. Cragin of New York, a commission to examine another section of the same road on the Rocky Mountain division, in Montana Territory.

J. E. Childs has been appointed assistant general superintendent of the New York, West Shore and Buffalo Railway, with his office at 15 Broad street, New York. He will have charge of arranging the operating department, appointing the various officers, agents, etc., subject to the approval of the general manager; he will direct the movement of general traffic upon the road as it is opened for business, and will perform such other business as may be assigned to him.

The Directors of the Pennsylvania Railway Company have appointed John Thomas general superintendent of the eastern and western divisions of the Pittsburgh, Ft. Wayne and Chicago Railway, the Lawrence Railroad, the New Castle and Beaver Valley, the Erie and Pittsburgh, the Ashtabula and Pittsburgh, and the Northwestern Ohio railroads. His appointment takes effect May 15.

General Rosser, late chief engineer on the Canadian Pacific Railway, has been appointed engineer of the city of Winnipeg. He will still retain his position as chief engineer of the Winnipeg and Hudson Bay Railway, on which the engineering operations have already commenced.

H. B. McClellan has been made general eastern passenger agent and Charles G. Eddy general eastern freight agent of the Missouri Pacific and the Wabash, St. Louis and Pacific railways, with offices at No. 243 Broadway, N. Y.

L. W. Stevenson, late general agent of the Mexican National Railway at Monterey, has been appointed acting general freight and passenger agent of the same company with headquarters at Laredo, Texas.

R. C. Vilas has been appointed freight traffic manager of the New York, Lake Erie and Western Railroad Company and its leased lines, and Edward Foley the general freight agent of the company.

L. L. Lincoln, who has been superintendent for several years of the Bucksport and Bangor Railroad, has accepted the position of superintendent of the Buckfield and Rumford Falls Railroad.

Henry F. Douglas has been appointed chief engineer of the new line to be constructed by the Baltimore and Ohio Railroad Company between Baltimore and Philadelphia.

Francis C. Draine has been appointed general manager of the Staten Island Railway company. Holton Wood has been made treasurer, and J. J. Stephens auditor and secretary.

James L. Negley has been elected vice-president, and James L. Negley, Jr., secretary and treasurer of the Pittsburgh, Allegheny and Chicago Railroad Company.

Andrew J. Cromwell, assistant master of machinery of the Baltimore and Ohio Railroad, has been made acting master of machinery in the place of N. C. Chapman, resigned.

Barney Ball, of Syracuse, has been appointed general freight manager of the New York, West Shore and Buffalo Railroad Company.

Charles Daniel has been appointed master mechanic of the Memphis division of the Chesapeake, Ohio and Southwestern Railroad.

L. S. Coffin, of Fort Dodge, Iowa, has been appointed Railroad Commissioner of that State to succeed James Wilson, elected to Congress.

E. T. Logee has been elected superintendent of the Milford, Franklin and Providence Railroad, with headquarters at Milford.

New York Surface Steam Railways.

THE Railways of the State are naturally divided into three distinct classes, viz: the Surface Steam Railways, the Elevated Steam Railways and the Surface Street Railways—the last two are treated of in another portion of this month's issue. Of the former it should be borne in mind that many of them either pass through or terminate in other States; and therefore the ratio of mileage in this State, as compared with the total miles operated by such corporations, has necessarily been resorted to as the only means of obtaining even an approximation to other important results, which are applicable only to the railway system properly pertaining to the State of New York. Of this class there are 324 corporations which, being organized under the laws of the State, are required to make annual reports to the State Engineer and Surveyor, in the form, and within the time prescribed by law, and for the fiscal year ending September 30, in each year. Of this number only 260 have made such reports for the year ending September 30, 1882.

Of the roads reporting there were in operation 7,369.45 miles, and of branches 2,689.02 miles, a total of 10,058.47 miles (of which there were 6,641.63 miles in this State.) To which add 2,616.61 miles of additional track, and 3,056.75 miles of sidings —making the total miles of track in operation 15,731.83 (of which 10,447.50 miles are in this State). There were also 628 miles of road completed, but not in operation, on the 30th September last, and therefore not computed in the above mileage, including the New York, Chicago and St. Louis; and a considerable portion of the New York, West Shore and Buffalo, which has since been in rapid progress, with every prospect of its completion during the present year.

Upon the roads in operation there were in use at the close of the year 3,541 locomotive engines, being an average of one for each 2.84 miles of road. Of these, 883 were for passenger service, 1,752 for freight service, 631 for switching, and 71 for mixed service, while 204 were leased but not owned. The car equipment consisted of: 2,297 first-class passenger (an average of one for each 4.38 miles of road), 552 second-class and emigrant (an average of one for each 18.22 miles of road), 876 baggage, mail and express (an average of one for each 11.48 miles of road), 140,240 freight of all kinds, of which 25,746 are leased, (an average of 13.94 for each mile of road).

The number of miles run by passenger trains was 27,715,904. Passengers transported: through, 8,226,427; do. way, 48,758,047; do. not designated, 9,707,088—total, 66,601,562, equal to 1,677,388,206 transported one mile. Average miles traveled by each passenger, 25.15. Average amount received per passenger per mile, 2.02 cents; average cost of transportation per passenger per mile, 1.40 cent.

The number of miles run by freight trains was 50,323,001. Tons of freight transported: products of the forest, 5,195,325; products of animals, 2,501,313; products of agriculture, 10,932,284; products of manufacture, 6,677,157; products of merchandise, 7,170,273; products of other articles, 38,695,164—total, 71,171,516, equal to 8,852,782,515 tons transported one mile. Average miles each ton was carried, 124.38; average amount received per ton per mile 0.8168 cent; average cost of transportation per ton per mile, 0.6166 cent.

The receipts during the year were: from passengers, $33,872,943.85; from freight, $72,310,074.95; from mails, $2,276,965.46; from rents, $2,064,568.18; from other sources, $8,242,386.81—total, $118,766,939.25 (of which $78,421,989.33 is the proportion for this State).

The expenditures during the same time were: for cost of transportation, $77,999,405.98; for interest, $17,171,338.09; for dividends, $16,290,927.37; for rentals of leased lines, $4,089,798.93; for miscellaneous items, $1,911,122.84—total, $117,462,593.21, (of which $73,233,357.09 is the proportion for this State).

The total cost of roads in operation was $702,868,948.18 (proportion for this State, $464,105,946.46); total cost of equipment, $95,522,313.28, (proportion for this State, $63,073,727.01); in addition to which there had been expended on roads not in operation, $106,980,670.58.

The total capital stock issued amounted to $623,772,211.67, (proportion for this State, $397,386,453.21); total funded debt $447,531,783.47, (proportion for this State, $285,108,996.17); total unfunded debt, $33,747,405.09, (proportion for this State, $21,501,330.56—total capital stock and indebtedness, $1,105,051,400.23, (proportion for this State, $703,996,779.94).

Percentage of net earnings on capital stock and debt, 4.096; do. on cost of road and equipment, 5.106. Percentage of passenger expenses to passenger earnings, 69.01; do freight expenses to freight earnings, 75.48; do. total expenses to gross earnings, 65.67. Average cost per mile: for maintaining road and real estate, $1,893.50; for repairs of machinery and cars, $1,366.83; for operating road, $4,495.22; for transportation expenses, $7,755.55. Average number of persons employed during the year, 80,258; average for each mile of road, 8.

Semi-Centennial of the Philadelphia and Reading Railroad Co.

APRIL 4, 1883, was the fiftieth anniversary of the incorporation of the Philadelphia and Reading Railroad Company. The incorporators of 1833, who were then known as "Commissioners," were Thomas Biddle, Edward R. Biddle, John White, Robert A. Parrish, and James Wood, of Philadelphia; Jonathan Roberts and Reece Thomas, of Montgomery county; Matthias Pennypacker, Emmor Kimber, Samuel Shaffer and William Rogers, of Chester county; G. DeB. Keim, M. S. Richards, Isaac Heister and James Everhart, of Berks county; Samuel Harvey and Jedediah Strong, of Germantown; Joseph Solms, Eliah Dallett, Jacob Frick, Joseph B. Mitchell, James McCormack, James Boon, William G. Alexander, Erskine Hazard, Joshua Lippincott and William A. Marvin. The act has been supplemented frequently during the past fifty years, and it is a curious fact that the supplemental acts were nearly if not quite all passed in the month of April.

A COMPARATIVE test between the Salmon Heater in a combination car, and a Baker & Smith Heater in a passenger car running on the same train proved the Salmon Heater to possess the power of heating up the circuit of pipes in one-fourth the time required by the Baker & Smith; the car was kept warmer with less radiating pipe, and a saving of 100 pounds of coal in six days; the circumstances in the test being manifestly in favor of the Baker & Smith, a combination car being harder to heat.

AT the general Railroad Time Convention in St. Louis, Mo., on the 13th ult., a resolution on standard time was adopted providing that roads east and adjacent to Washington shall run by the 75th meridian or Eastern time. Between these points and Kansas City they shall run by the 90th meridian or central time, or one hour slower than Eastern time; west of Kansas City by the 105th and 125th meridian or Western time, two and three hours slower respectively than Eastern time.

AMONG subjects to be reported by committees at the annual convention of the Master Car-builders' Association to be held in Chicago, beginning June 12, 1883, are "Refrigerator Cars," "The Causes of Accidents to Train and Yard Men," and "Sharp Wheel Flanges."

THE next annual meeting of the Master Car Builders' Association will be held in the Grand Pacific Hotel at Chicago, Ill., June 12, 1883.

GREAT is the force of habit, and great are the excellence, variety and popularity of the Esterbrook Steel Pens.

RAILROAD EARNINGS.—MONTHLY.

B., C. Rap. & N.:	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1881	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	246,062	2,800,679
1883	197,402	187,001	252,913	218,253	.....	.....	.....	.....	.....	.....	.....	.....	.....
Central Pacific:													
1881	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,105	2,076,648	2,350,557	2,495,445	2,424,529	2,139,299	2,020,349	25,662,757
1883	1,718,000	1,424,000	2,021,000	2,035,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chesapeake and Ohio:													
1881	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,022	203,562	2,702,762
1882	208,746	179,053	215,445	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
1883	244,142	250,287	270,676	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago and Alton:													
1881	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	646,812	7,557,741
1882	585,830	517,897	588,700	564,861	559,577	617,250	702,635	856,398	912,692	858,674	749,915	701,066	8,215,495
1883	637,804	538,537	671,576	584,981	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago and Northwestern:													
1881	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882	1 644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,497,053	2,532,100	2,069,287	1,718,379	23,828,973
1883	1,362,704	1,264,907	2,059,700	1,742,900	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Burlington and Quincy:													
1881	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,176,455
1882	1 658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	2,199,421	2,027,060	22,350,804
1883	1,625,680	1,611,021	2,396,583	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Milwaukee and St. Paul:													
1881	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,67c	1,591,052	1,569.597	1,854 269	17,025,462
1882	1,434,536	1,376,376	1,561,386	1,517,567	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	1,964,000	20,386,726
1883	1,359,000	1,258,000	2,044,000	1,972,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, St. Paul, Minneapolis and Omaha:													
1881	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,029	592,921	432,615	3,981,296
1882	327,498	333,200	413,200	377,288	406,420	363,109	331,480	394,555	482,997	546,671	317,595	375,796	4,973,052
1883	302,700	277,900	415,800	419,535	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denver and Rio Grande:													
1881	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	626,728	5,980,488
1882	488,599	407,000	521,500	556,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	443,000	6,349,857
1883	418,300	433,400	521,600	573,700	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hannibal and St. Joseph:													
1881	154,401	122,874	176,356	190,812	172,950	190,740	201,893	210,240	215,103	231,913	195,607	194,336	2,230,961
1882	125.601	152,691	185,368	158,113	151,999	147,526	184,609	254,569	239,732	238,563	249 252	239,891	2,303,388
1883	179,591	180,887	228,410	193,481	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois Central:													
1881	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737 218	763,475	8,586,397
1882	1,019,453	987,998	995.474	887,543	674,749	663,746	752,251	813,600	828,238	865,325	752,144	697,051	8,831,281
1883	1,058,620	931,971	1,106,658	888,431	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana, Bloomington and Western:													
1881	90,283	83,261	192,085	203,677	200,064	199,846	199,125	272,114	247,332	225,678	200,450	192,622	2,487,569
1882	195,824	175,755	204,538	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	205,212	2,641,675
1883	248,142	202,931	268,801	215,912	.....	.....	.....	.....	.....	.....	.....	.....	.....
Louisville and Nashville:													
1881	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,114,513	1,215,932	1,192,390	1,221,509	12,981,432
1883	1,118.735	1,015,000	1,141,337	941,129	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile and Ohio:													
1881	224,347	216,768	230,916	163,551	145,803	136,517	135,546	160,789	210,262	256,924	262,986	258,812	2,403,224
1882	159,676	158,590	148,166	141,957	134,378	136,184	135,174	137,475	157,874	267,433	295,110	307,643	2,179,666
1883	216,608	172,200	180,113	128,462	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashville, Chattanooga and St. Louis:													
1881	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168 317	179,979	172,121	152,059	173,127	2,075,258
1882	170,753	174,974	177,336	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	186,352	1,933,047
1883	197,388	195,262	206,164	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York and New England:													
1881	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,200	240,764	240,063	2,809,255
1882	213,840	217,261	265,222	261,044	289,722	295,392	298,441	346,490	338,347	310,145	276,183	261,082	3,408,169
1883	258,266	231,741	284,869	268,853	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York, Lake Erie and Western:													
1880	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,910	1,799,338	1,726,788	19,149,361
1881	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	1,715,469	1,571,208	20,393,112
1882	1,318,097	1,304,757	.....	.....	.....	.....	.....	.....	.....	1,819,010	1,818,824	1,691,404	20,203,469
1883	1,524,869	1,283,616	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Northern Central:													
1881	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882	407,368	413,551	430,194	435,129	482,607	482,752	509,683	667,488	592,435	550,225	526,685	490,003	5,800,176
1883	499,262	486,865	506,864	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Northern Pacific:													
1881	116,508	78,803	162,984	216,210	312,705	412,024	393,260	434,085	534,363	583,955	475,610	439,724	4,044,576
1882	245,369	268,935	373,141	451,023	616,231	704,617	694,067	727,215	772,838	829,831	761,324	564,749	7,009,344
1883	392,035	373,091	583,400	675,200	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philadelphia and Erie:													
1881	224,303	225,501	285,573	293,323	343,792	350,585	291,669	303,849	276,522	292,392	284,078	282,772	3,454,309
1882	252,727	245,246	265,311	277,851	341,415	347,614	377,206	20,3294	386,455	397,164	369,583	335,513	4,011,413
1883	319,720	295,638	308,069	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis and San Francisco:													
1881	212,435	178,234	262,050	265,298	283,399	260,254	252,333	286,373	279,064	308,569	284,320	287,914	3,160,245
1882	256,784	244,654	274,959	242,806	253,419	240,177	318,613	381,637	336,805	360,900	331,490	339,424	3,582,811
1883	278,321	236,278	351,689	274,011	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis, Alton and Terre Haute:													
1881	175,725	166,012	201,137	197,447	172,177	165,896	165,393	189,180	196,368	204,338	169,795	171,127	2,112,801
1882	168,987	140,619	177,609	165,401	162,842	142,742	192,017	236,137	217,659	229,962	206,040	184,526	2,245,320
1883	193,614	177,717	204,762	160,805	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis, Iron Mountain and Southern:													
1881	570,957	560,791	704,002	548,300	479,075	474,302	533,512	644,386	708,325	719,239	687,271	709 498	7,319,744
1882	516,370	501,127	585,008	581,977	519,120	529,700	515,519	675,981	724,160	809,394	843,973	781,305	7,581,635
1883	665,258	522,781	632,228	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Paul, Minneapolis and Manitoba:													
1881	254,187	159,482	320,962	425,685	382,642	405,322	387,488	414,954	485,736	605,708	508,530	528,262	4,878,960
1882	305,461	418 358	531,071	570,890	858,902	856,417	853,296	801,759	832,776	979,057	913,335	753,515	8,764,770
1883	489,763	389,612	729,844	812,008	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas and Pacific:													
1881	281,176	260,781	319,928	295,066	281,782	285,305	328,063	381,331	345,790	419,203	369,521	401,058	3,921,569
1882	323,987	278,535	343,442	359,543	409,228	384,713	367,215	439,918	470,613	541,901	619,655	641,044	5,143,179
1883	534,529	416,040	526,901	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Pacific Railway:													
1881	1,339,799	1,374,740	1,674,860	1,766,894	2,319,238	2,884,774	2,528,826	2,638,659	2,844,357	3,169,530	2,723,608	2,267,004	29,776,899
1882	2,186,020	1 835,620	2,392,593	2,362,004	2,491,590	2,508,453	2,301,000	2,762,107	2,949,112	3,158,337	2,821,070	2,294,000	30,088,109
1883	1,986,535	1,743,207	2,489,405	2,199,231	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wabash, St. Louis and Pacific:													
1881	865,339	813,374	1,109,399	967,033	1,148,669	1,330,944	1,120,615	1,542,124	1,497,246	1,406,029	1,372,360	1,294,657	14,467,790
1882	1,220,065	1,134,768	1,313,776	1,378.194	1,204,864	1,149,632	1,418,837	1,772,544	1,682,382	1,595,680	1,525,715	1,332,952	16,738,360
1883	1,307,783	1,070,758	1,479,236	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susquehanna* 100	3,300,000	semi-an	Jan. 1, '83 2
Atchison, Topeka and Santa Fe 100	56,932,200	q'arterly	May 15, '83 1½
Atlanta and Charlotte Air Line 100	1,700,000	semi-an	Mar. 5, '83 2
Atlanta and West Point 100	1,232,200	semi-an	Feb. 1, '83 6½
Atlantic and St. Lawrence* 100	5,484,000	semi-an	Mar. 15, '83 3½
Augusta and Savannah 100	1,032,200	semi-an	Dec. 4, '82 3½
Avon, Genesee & Mount Morris* 100	225,000	semi-an	Jan. 1, '82 3
Baltimore & Hanover 100	85,805	.....	Apl. 9, '83 3
Baltimore and Ohio 100	14,792,566	semi-an	May 1, '83 5
" " pref. 100	5,000,000	semi-an	Jan. 1, '83 3
Washington Branch 100	1,650,000	q'arterly	May 1, '83 5
Berkshire* 100	600,000	annual.	Apl. 2, '83 1¾
Boston and Albany 100	20,000,000	q'arterly	Mar. 31, '83 2½
Boston & New York Air Line pref. 100	2,795,227	semi-an	Apl. 15, '83 2
Boston, Concord & Montreal pref* 100	800,000	semi-an	May 15, '83 3
Boston and Lowell 500	3,792,000	semi-an	Jan. 1, '83 4½
Boston and Maine 100	7,000,000	semi-an	May 15, '83 4
Boston & Providence 100	4,000,000	semi-an	May 1, '83 4
Attleborough Branch 100	131,700	semi-an	Jan. 1, '83 3½
Boston, Revere Beach & Lynn 100	419,400	semi-an	Jan. 1, '83 3
Buffalo, New York & Erie* 500	950,000	semi-an	Dec. 1, '82 3
Buffalo, New York & Philadelphia pf. 50	6,000,000	q'arterly	Mar. 1, '83 1½
Camden & Atlantic 50	377,400	q'arterly	Nov. 1, '82 4
" " pref. 100	880,650	q'arterly	Nov. 1, '82 3
Camden & Burlington County 100	381,925	semi-an	Jan. 1, '83 3
Canada Southern 100	15,000,000	.....	Feb. 1, '81 2½
Cape May & Millville* 50	447,000	semi-an	Dec. 1, '82 3
Catawissa 50	1,159,500	annual	Oct. 1, '82 2½
" pref 0	2,200,000	semi-an	May 16, '83 3½
" new pref. 50	1,000,000	semi-an	May 16, '83 3½
Cayuga and Susquehanna* 500	589,110	semi-an	Jan. 1, '83 4½
Cedar Rapids & Missouri River* 100	6,850,400	q'arterly	May 1, '83 1½
" " " pref. 100	769,600	semi-an	Feb. 1, '83 3½
Central of Georgia 100	7,500,000	semi-an	Dec. 26, '82 4
Central Ohio* 50	2,437,950	semi-an	Jan. 31, '83 3
" pref. 50	411,550	semi-an	Jan. 31, '83 3
Central Pacific 150	59,275,500	semi-an	Feb. 1, '83 3
Cheshire preferred 100	2,153,300	semi-an	Jan. 10, '83 1½
Chicago and Alton 100	12,504,600	semi-an	Mar. 1, '83 4
" " pref 100	2,425,400	semi-an	Mar. 1, '83 4
Chicago, Burlington & Quincy 100	69,814,191	q'arterly	June 15, '83 2
Chicago, Iowa & Nebraska* 100	3,916,200	semi-an	Jan. 1, '83 4
Chicago, Milwaukee & St. Paul 100	27,904,261	semi-an	Apl. 16, '83 3½
" " " pref. 100	16,447,483	semi-an	Apl. 16, '83 3½
Chicago & Northwestern 100	16,737,655	semi-an	Dec. 27, '82 3½
" " pref. 100	22,210,844	q'arterly	Mar. 27, '83 2
Chicago, Rock Island & Pacific 100	41,960,000	q'arterly	May 1, '83 1¾
Chicago & West Michigan 100	6,796,800	semi-an	Feb. 15, '83 3
Chicago, St. Paul, Minn. & Omaha pf. 100	11,396,600	q'arterly	Apl. 20, '83 1¾
Cincinnati, Hamilton & Dayton 100	3,500,000	semi-an	Jan. 5, '83 3
Cincinnati, Ind., St. Louis & Chicago. 100	8,000,000	q'arterly	Jan. 15, '83 1½
Cincinnati, Sandusky & Cleveland pf. 50	428,850	semi-an	May 1, '83 3
Cleveland Columbus, Cincin. & Ind. 100	14,991,800	.....	Feb. 1, '83 2
Cleveland & Pittsburg* 50	11,235,430	q'arterly	June 1, '83 1¾
Columbus & Xenia* 50	1,786,200	q'arterly	June 10, '83 2
Columbus, Hocking Valley & Toledo 100	10,316,500	.....	Jan. 10, '83 2½
Concord 50	1,500,000	semi-an	May 1, '83 5
Concord and Portsmouth* 100	350,000	semi-an	Jan. 1, '83 3½
Connecticut & Passumpsic Rivers 100	2,244,400	semi-an	Feb. 1, '83 3
Connecticut River 100	2,370,000	semi-an	Jan. 1, '83 4
Cumberland Valley 50	1,292,950	q'arterly	Apl. 2, '83 2½
" 1st pref. 50	241,000	semi-an	Apl. 2, '83 4
" 2d pref. 50	243,000	semi-an	Apl. 2, '83 4
Danbury & Norwalk 50	600,000	semi-an	Apl. 1, '83 2½
Dayton and Michigan* 50	2,402,573	semi-an	Apl. 1, '83 1¾
" " pref. 50	1,211,250	q'arterly	Apl. 1, '83 2
Delaware* 25	1,468,940	semi-an	Jan. 2, '83 3
Delaware & Bound Brook* 100	1,652,000	q'arterly	May 14, '83 1¾
Delaware, Lackawanna & Western 50	26,200,000	q'arterly	Apl. 20, '83 2
Denver & Rio Grande 100	33,000,000	q'arterly	Jan. 14, '82 1½
Detroit, Lansing & Northern 100	1,825,600	semi-an	Feb. 15, '83 3
" " " pref. 100	2,508,380	semi-an	Feb. 15, '83 3
Dubuque & Sioux City* 100	5,000,000	semi-an	Apl. 16, '83 3
East Pennsylvania* 50	1,709,550	semi-an	Jan. 18, '83 3
East Mahanoy* 50	392,950	semi-an	Jan. 1, '83 3
Eastern (N. H.) 100	492,500	semi-an	Dec. 15, '82 2½
Eel River 100	3,000,000	q'arterly	Mar. 5, '83 1
Elmira & Williamsport* 50	500,000	semi-an	May 1, '83 2½
" " pref. 50	500,000	semi-an	Jan. 1, '83 3½
Erie and Pittsburgh* 50	1,998,400	q'arterly	June 10, '83 1¾
European & North American 100	2,500,000	semi-an	Apl. 1, '83 2½
Evansville & Terre Haute 50	3,100,000	.....	Jan. 1, '83 6b
Fitchburg 100	4,950,000	semi-an	Jan. 1, '83 3
Flint & Pere Marquette pref. 100	6,500,000	semi-an	Jan. 15, '83 3½
Fort Wayne & Jackson pref. 100	2,284,800	.....	May 4, '82 2
Georgia 100	4,200,000	q'arterly	Apl. 15, '83 2½
Granite 100	1,250,000	semi-an	Jan. 1, '83 3
Greenwich & Johnsonville 100	118,000	semi-an	Jan. 1, '83 4
Hannibal & St. Joseph pref. 100	5,083,024	semi-an	Feb. 15, '83 3
Harrisburg & Lancaster 50	1,182,500	semi-an	Jan. 10, '83 3½
Hartford & Connecticut Western 100	2,700,000	.....	Dec. 1, '82 1½
Housatonic pref. 100	1,180,000	q'arterly	Apl. 15, '83 2
Illinois Central 100	39,000,000	semi-an	Mar. 1, '83 4
Iowa Falls & Sioux City* 100	4,623,500	q'arterly	Mar. 1, '83 1¾
Iowa R.R.& Land Co. 100	7,620,000	q'arterly	May 1, '83 1
Jeffersonville, Madison & Indi'apolis. 100	2,000,000	q'arterly	May 1, '82 1¾
Joliet and Chicago* 100	1,500,000	q'arterly	Apl. 1, '83, 1¾
Kansas City, Fort Smith & Gulf 100	4,648,000	.....	Feb. 15, '83 3
" " " pref. 100	2,750,000	semi-an	Feb. 15, '83, 4
Lake Shore & Michigan Southern 100	49,466,500	q'arterly	May 1, '83, 2
" " (guar.) 100	533,500	semi-an.	Feb. 1, '83, 5
Lawrance* 50	450,000	q'arterly	Apl. 1, '83, 2
Lehigh Valley 50	27,496,895	q'arterly	Apl. 16, '83 2
" pref. 50	106,200	q'arterly	Apl. 16, '83 2½
Little Miami 50	4,637,300	q'arterly	June 10, '83 2
Little Schuylkill* 50	2,646,100	semi-an.	Jan. 12, '83 3½
Long Island 50	10,000,000	q'arterly	May 1, '83 1
Louisville & Nashville 100	25,000,000	semi-an.	Feb. 1, '82 3
Lowell & Andover 100	500,000	semi-an.	Jan. 1, '83 3½
Lykens Valley 20	600,000	q'rterly.	Jan. 3, '83 2½
Maine Central 100	3,603,300	semi-an.	Feb. 15, '83 2½
Manchester & Lawrence 100	1,000,000	semi-an.	May 1, '83 5
Manhattan 100	13,000,000	.....	.....
" 1st pref. 100	6,500,000	q'rterly.	Apl. 2, '83 1½
" 2d pref. 100	6,500,000	q'rterly.	Jan. 2, '83 1½
Marquette, Houghton & Ontonagon 100	2,756,600	.....	Feb. 15, '83 4
" " pref. 100	2,259,026	semi-an.	Feb. 15, '83 4
Massawippi* 100	400,000	semi-an.	Feb. 1, '83 3
Metropolitan 100	6,500,000	q'rterly	Oct. 2, '82 1½
Michigan Central 100	18,738,204	semi-an.	Feb. 1, '83 2
Middlesex Central 100	280,000	semi-an.	Feb. 1, '83 3
Mill Creek & Minehill* 50	323,000	semi-an.	Jan. 1, '83 5
Mine Hill & Schuykill Haven* 50	4,022,500	semi-an.	Jan. 12, '83 3½
Missouri Pacific 100	30,000,000	q'rterly.	Apl. 2, '83 1¾
Morris and Essex 50	15,000,000	semi-an.	Jan. 2, '83 3½
Mount Carbon & Port Carbon 50	282,350	semi-an.	Jan. 2, '83 6
Nashua and Lowell 100	800,000	semi-an.	May 1, '83 4
Nashua & Rochester 100	1,305,800	semi-an.	Apl. 2, '83 1½
Nashville & Decatur 100	1,356,632	semi-an.	Dec. 10, '82 3
Nashville, Chattanooga & St. Louis 25	6,670,325	semi-an.	Apl. 20, '82 1½
Naugatuck 100	2,000,000	semi-an.	Jan. 15, '83 5
Nesquehoning Valley* 50	1,300,000	semi-an.	Mar. 1, '83 3
New Castle & Beaver Valley* 50	700,000	q'rterly.	Apl. 1, '83 —
New London Northern* 100	1,500,000	q'rterly.	Apl. 1, '83 1½
New York Central & Hudson River. 100	89,428,330	q'rterly.	Apl. 15, '83 2
New York and Harlem 100	8,500,000	semi-an.	Jan. 2, '83 4
" " pref. 100	1,500,000	semi-an.	Jan. 2, '83 4
" City Line —	.....	annual	Apl. 2, '83 2
New York, Lackawanna & Western 100	10,000,000	q'rterly	Apl. 2, '83 1¼
New York, Lake Erie & Western 100	77,087,600	.....	.....
" " " pref. 100	7,987,500	annual.	Jan. 2, '83 6
New York, New Haven & Hartford 100	15,500,000	semi-an.	Jan. 2, '83 5
New York, Ontario & Western pref. 100	2,000,000	.....	Mar. 1, '83 12
New York, Providence & Boston 100	3,000,000	q'rterly.	May 10, '83 2
Niagara Bridge & Canandaigua* 100	1,000,000	semi-an	Apl. 1, '83 3
North Carolina* 100	3,000,000	semi-an.	Mar. 1, '83 3
" " pref. 100	1,000,000	semi-an.	Mar. 1, '83 3
Norfolk & Western pref. —	15,000,000	q'rterly.	Dec. 15, '82 $1
Northeastern (South Carolina) 50	899,350	.....	Apl. 2, '83 3
North Pennsylvania 50	4,399,750	q'rterly.	May 25, '83 1¾
Northern Central 50	6,500,000	semi-an.	Jan. 15, '83 4
Northern New Hampshire 100	3,068,400	semi-an.	Dec. 1, '82 3
Northern Pacific pref. 100	41,909,132	.....	Jan. 15, '83 11.1
Norwich & Worcester* 100	2,604,400	semi-an.	Jan. 10, '83 5
Oregon & Transcontinental 100	40,000,000	q'rterly.	Apl. 10, '83 1½
Old Colony 100	7,533,800	semi-an.	Jan 1, '83 3½
Oregon Improvement Co. 100	5,000,000	semi-an.	Mar. 1, '83 3½
Oregon Railway & Navigation Co. 100	18,000,000	q'rterly.	May 1, '83 2½
Oswego & Syracuse 100	1,320,400	semi-an.	Feb. 1, '83 4½
Panama 100	7,000,000	semi-an	Jan. 10, '83 6½
Paterson & Hudson* 100	630,000	semi-an.	Jan. 3, '83 4½
Paterson & Ramapo 100	248,000	semi-an.	July 1, '82 4
Pemberton & Hightstown* 50	342,150	semi-an.	Jan. 1, '83 3
Pennsylvania 50	85,751,550	semi-an.	May 29, '83 4
Pennsylvania Co. 50	20,000,000	annual	Dec. 15, '82 4
Peoria & Bureau Valley* 100	1,500,000	semi-an.	Feb. 1, '83 4
Philadelphia, Ger. & Norrist'n 50	2,231,900	q'rterly.	June 3, '83 3
Philadelphia and Trenton 100	1,259,100	q'rterly.	Apl. 10, '83 2½
Philadelphia, Wilmington and Balt. 50	11,795,050	semi-an.	Jan. 2, '83 4
Pittsburgh, Fort Wayne & Chicago* 100	19,714,285	q'rterly.	Apl. 2, '83 1¾
" Special Imp 100	7,698,900	q'rterly.	Apl. 3, '83 1¾
Pittsfield & North Adams 100	450,000	semi-an.	Jan. 1, '83 2½
Portland, Saco & Portsmouth 100	1,500,000	semi-an.	Jan. 15, '83 3
Providence & Worcester 100	2,500,000	semi-an.	Jan. 1, '83 3
Rensselaer & Saratoga* 100	6,854,100	semi-an.	Jan. 2, '83 4
Richmond & Danville 100	5,000,000	q'rterly.	Aug. 15, '82 2
Richmond & Petersburg 100	1,009,300	semi-an.	Aug. 1, '82 2
Rochester & Genesee Valley* 100	555,200	semi-an.	Jan. 1, '83 3
Rome, Watertown & Ogdensburg. 100	5,293,900	.....	Jan. 1, '83 3
Rutland preferred 100	4,000,000	semi-an.	Sept. 1, '82 1
Spuyten Duyvil & Port Morris 100	989,000	semi-an.	Jan 2, '83 4
St. Louis, Alton & Terre Haute pref. 100	2,468,406	.....	May 1, '83 7
St. Louis & San Francisco 1st pref. 100	4,500,000	semi-an.	Feb. 1, '83 3½
St. Louis, Jacksonville & Chicago. 100	1,293,000	.....	Aug. 1, '82 4½
" " " pref. 100	1,034,000	.....	Aug. 1, '82 4½
St. Paul & Duluth pref. 100	5,121,700	semi-an.	Jan. 1, '83 3½
St. Paul, Minneapolis & Manitoba 100	20,000,000	q'rterly.	May 1, '83 2
Schuylkill Valley* 50	576,050	semi-an.	Jan. 15, '83 2½
Seaboard & Roanoke 100	1,302,200	semi-an.	May 1, '83 5
Shamokin Valley & Pottsville 50	869,450	semi-an.	Feb. 1, '83 3
Shore Line* 100	1,000,000	semi-an.	Jan. 6, '83 4
Sioux City & Pacific pref. 100	169,000	semi-an.	Apl. 2, '83 3½
South Branch (N. J.)* 100	438,300	semi-an.	Jan. 2, '83 3
South Western (Ga.)* 100	5,031,700	semi-an.	Dec. 26, '82 3½
Stockbridge & Pittsfield* 100	448,700	q'rterly.	Apl. 2, '83 1¾
Sunbury & Lewistown 50	161,000	semi-an.	Apl. 2, '83 3
Syracuse, Binghamton & New York* 100	2,500,000	semi-an.	Feb. 1, '83 2
Terre Haute & Indianapolis 100	1,988,150	semi-an.	Feb. 1, '83 4
Union Pacific 100	60,854,105	q'rterly.	Apl. 1, '83 1¾
United Companies of New Jersey* 100	21,090,400	q'rterly.	Apl. 10, '83 2½
Utica, Shenango & Susq. Valley 100	4,000,000	semi-an.	Nov. 1, '82 3
Utica and Black River 100	1,772,000	semi-an.	Mar 31, '83 2
Vermont and Massachusetts 100	3,050,000	semi-an.	Apl. 7, '83 3
Vermont Valley 100	1,000,000	annual	Jan. 2, '83 3

RAILROAD, TRAMWAY AND CANAL DIVIDEND STATEMENT.

(CONTINUED.)

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Ware River*.....100	750,000	semi-an.	Jan. 3, '83 3½
Warren (N. J.).....100	1,800,000	semi-an.	Apl. 1, '83 3½
West Jersey.....50	1,375,800	semi-an.	Mar. 15, '83 3¤
Wilmington & Weldon.....100	2,082,400	semi-an.	Jan. 15, '83 3
Wilmington, Columbia & Augusta....100	960,000	semi-an.	Jan. 10, '83 3
Winchester & Potomac*.....100	180,000	semi-an.	Jan. 1, '83 3
Winchester & Strasburg*.....100	74,700	semi-an.	Jan. 1, '83 3
Worcester & Nashua.....75	1,789,800	semi-an.	Jan. 1, '83 1½
TRAMWAYS.			
Baltimore City 25	1,000,000	annual	Jan. 1, '83 3
Baltimore, Catonsville & El. Mills....100	80,000	semi-an.	Jan. 1, '83 2½
Bleecker Street & Fulton Ferry.....100	900,000	semi-an.	July 1, '82 3½
Boston & Chelsea pref.....50	110,000	semi-an.	Apl. 2, '83 3
Broadway (Brooklyn).....100	250,000	semi-an.	Apl. 1, '83 3
Broadway & 7th Avenue (New York)..100	2,100,000	q'arterly	Apl. 1, '83 2
Brooklyn City & Newtown.....100	880,600	q'arterly	Apl. 1, '83 3
Brooklyn City 100	2,000,000	semi-an.	May. 1, '83 3½
Bushwick (Brooklyn).....100	400,000	q'arterly	Apl. 1, '83 3
Cambridge (Mass.).....100	908,000	semi-an.	Apl. 2, '83 4½
Central Park, North & East River.....100	1,800,000	q'arterly	Apl. 1, '83 2
Christopher & Tenth Street.....100	650,000	q'rterly.	Feb. 1, '83 2½
Citizens' (Phil.).....50	192,500	semi-an.	Apl. 1, '83 2½
Citizens' (Pbg.).....50	200,000	q'rterly.	.. ....'80 14½
Coney Island & Brooklyn.....100	500,000	annual..	Apl. 1, '83 4
Continental (Phil.).....50	580,000	semi-an.	Jan. 1, '83 –
Dry Dock, East Broadway & Battery..100	1,200,000	semi-an.	May 1, '83 3
Eighth Avenue (New York).....100	1,000,000	q'arterly	Apl. 1, '83 3
Forty-second St. & Grand St. Ferry...100	748,000	q'rterly.	May 1, '83 6
Frankford & Southwark (Phila.).....50	600,000	semi-an.	Apl. 1, '83 4
Germantown, (Phila.).....50	1,540,902	q'rterly.	Apl. 1, '83 2½
Girard College (Phila.).....50	500,000	q'rterly.	July 1, '71 3
Grand Street & Newtown.....100	170,000	semi-an.	Jan. 1, '83 2½
Green & Coates Street (Phila.).....50	708,650	semi-an.	Apl. 1, '83 3
Hestonville, Mantua & Fairmount ...50	299,381	q'rterly.	Jan. 1, '75 4
Highland (Boston).....100	600,000	semi-an.	Jan. 1, '83 4
Lombard & South Streets (Phila.).....25	195,000	semi-an.	Oct. 1, '75 4
Lynn and Boston.....100	200,000	semi-an.	May 1, '83 4
Metropolitan (Boston).....50	1,500,000	semi-an.	Jan. 1, '83 4
Middlesex (Boston).....100	650,000	semi-an.	May 15, '83 3½
Ninth Avenue (New York).....100	797,320	semi-an.	....
People's (Phila.) pref.....25	115,250	.....	July 1, '82 2
Philadelphia City.....50	475,000	semi-an.	July 1, '82 4
Philadelphia and Darby.....20	200,000	semi-an.	July 1, '81 3½
Philadelphia & Grey's Ferry.....50	308,000	semi-an.	Jan. 1, '82 6
Pittsburgh, Allegheny & Manchester. 50	300,000	q'rterly.	Oct. 1, '81 3
Ridge Avenue (Phila.).....50	420,000	semi-an.	Apl. 1, '83 5½
Second Avenue (New York).....100	1,199,500	semi-an.	Jan. 1, '83 2½
Second & Third Streets (Phila).....50	771,076	q'rterly.	Apl. 1, '83 4
Seventeenth & Nineteenth sts (Phila.). 50	250,000	semi-an.	July 1, '81 3
Sixth Avenue (New York).....100	750,000	semi-an.	May 1, '83 4½
Somerville (Boston).....100	113,000	semi-an.	May 1, '83 3
South Boston.....50	600,000	semi-an.	Jan. 1, '83 4
Third Avenue, (New York) 100	2,000,000	q'rterly.	May 1, '83 5
Thirteenth & Fifteenth Sts. (Phila.)... 50	334,529	q'rterly.	Apl. 1, '83 4
Twenty-third Street (New York).....100	600,000	semi-an.	Feb. 1, '83 4
Union, (Boston) 100	374,300	semi-ann	Jan. 2, '82 4
Union, (Phila.) 50	751,100	semi-an.	Jan. 1, '83 –
West Philadelphia.....50	750,000	semi-an.	July 1, '77 10
CANALS.			
Chesapeake and Delaware 50	2,078,038	semi-an.	June 1, '75 2
Delaware Division.....50	674,950	semi-an.	Feb. 15, '83 2
Delaware and Hudson.....100	20,000,000	q'rterly.	Mar. 11, '83 1¾
Delaware & Raritan*.....100	5,847,400	q'rterly.	Apl. 10, '83 2½
Lehigh Coal and Navigation.....50	11,273,400	semi-an.	Dec. 13, '82 2
Monongahela Navigation.....50	1,004,500	semi-an.	Jan. 1, '83 $3
Morris, consolidated.....100	1,025,000	semi-an.	Feb. 1, '83 2
" preferred.....100	1,175,000	semi-an.	Feb. 1, '83 5
Pennsylvania.....50	4,501,200	....	....
Schuylkill Navigation com.*.....50	859,100	annual..	Oct. 15, '82 50c.
" " pref.....50	3,200,000	annual..	Oct. 15, '82 $1
MISCELLANEOUS.			
Adams Express 100	12,000,000	q'rterly.	June 1, '83 2
American Express.....50	18,000,000	semi-an.	Jan 2, '83 3
Calumet & Hecla Mining Co.....50	100,000 S.	q'rterly.	May 15, '83 $5
Central Mining Co.....100	.....	annual.	Feb. 15, '83 $3
Consolidation Coal.....100	10,250,000	semi-an.	Jan. 27, '82 2
George's Creek Coal & Iron.....100	.....	semi-an.	Jan. 1, '83 3
Maryland Coal 100	4,400,000	semi-an.	Feb. 1, '76 1½
Missouri Valley Land Co.....100	200,000	semi-an.	Jan. 1, '83 $6
National Tube Works.....100	2,000,000	q'rterly.	Apl. 2, '83 2
Pacific Mail Steamship.....100	20,000,000	q'rterly.	May 1, '83 3
Pennsylvania Coal.....50	5,000,000	q'rterly.	May 15, '83 2
Pullman Palace Car.....100	10,000,000	q'rterly.	May 15, '83 2
Quicksilver, com.....100	5,708,700	.....	May 1, '82 2 0.4
" pref.....100	4,291,300	.....	May 1, '82 6
Quincy Mining Co.....25	40,000 shs	semi-an.	Feb. 15, '83 $6
Quincy Railroad Bridge.....100	1,750,000	semi-an.	Jan. 1, '83 5
Sioux City & Iowa Falls L. & L. Co....100	500,000	semi-an.	Jan. 1, '83 3½
Spring Mountain Coal.....100	1,500,000	semi-an.	Dec. 11, '82 3½
Topeka Equipment Co.....100	255,500	semi-an.	Apl. 2, '83 5
United States Express.....100	7,000,000	q'rterly	May 1, '83 1
Wells, Fargo & Co. Express.....100	6,250,000	semi-an.	Jan. 1, '83 4
Western Union Telegraph.....100	80,000,000	q'rterly.	Apl. 1, '83 1¼

FINANCIAL AND COMMERCIAL DEPARTMENT.

NEW YORK, MONDAY, MAY 14, 1883.

RATES for call loans on stocks as collateral during the forenoon were 4 per cent, and for the remainder of the day were 3½ and 4 per cent; in the last hour they were 3½ and 4 per cent. Money continued easy and abundant during the entire day.

Foreign exchange was dull, and but a small volume of business transacted. The posted rates were 4.84 for sixty days, and 4.87½ for three days; the actual rates were as follows: sixty days, 4.83@4.83½; demand, 4.86½@4.86¾; cables, 4.87½@4.87¾; commercial bills, 4.81½@4.82.

The posted rates for continental bills of the leading drawers were: Paris, francs, 5.18¾ for sixty days, and 5.16¼ for three days; Antwerp, francs, 5.19⅜ and 5.16⅞; Zurich, francs, 5.18¾ and 5.16¼; Berlin, Bremen and Hamburg, reichsmarks, 95 and 95½; Amsterdam, guilders, 40⅛ and 40⅜. The actual rates were: francs, 5.20⅝@5.21¼ and 5.18⅛@5.18⅜; reichsmarks, 94⅝@94½ and 94⅞@95; guilders, 39 15-16@40 and 40 3-16@40¼.

The quotations for United States bonds at the close were: 3 per cents, 103¼@103½; 4s, 1907, coupon, 119⅛@119¼; do. reg., 119⅛@119¼; 4½s, 1891, coupon, 113@113½; do. reg., 112@112⅛; 5s, continued at 3½ per cent, 103@—; currency 6s, 1895-'99, 127@133.

The interest-bearing debt of the United States, April 30, 1883, is $1,348,478,000; debt on which interest has ceased since maturity, $9,091,085.26; debt bearing no interest, $525,958,975.81; interest, $9,711,225.79 —total debt and interest, $1,893,239,286.86. Of the debt bearing interest, $54,948,100 are bonds bearing interest at five per cent, continued at three and one-half per cent; $250,000,000 at four and one-half per cent; $737,571,650 at four per cent; $300,589,300 at three per cent; $368,950 refunding certificates, four per cent; $14,000,000 Navy Pension Fund, four per cent. The debt bearing no interest consists of: Old demand and legal tender notes, $346,740,051; certificates of deposit, $10,105,000; gold and silver certificates, $162,104,951; fractional currency, $7,008,973.81. The cash in the treasury amounts to $319,159,401.35; and the total debt, less cash in treasury, to $1,574,079,885.51, against $1,576,931,288.16 on the first of April, 1883, a decrease during the month of $2,851,402.65, and a decrease since the 30th of June, 1882, of $114,834,575.21. The cash balance available, May 1, 1883, amounts to $135,283,026.88.

The Pennsylvania Railroad Company has declared a semi-annual dividend of four per cent upon the capital stock of the company clear of all taxes, payable on and after May 29, 1883, to shareholders as registered on the books at 3 P. M., April 30th ult. The said dividend will be paid in the proportion of two per cent in cash and two per cent in scrip, redeemable in cash upon its delivery, or convertible into the capital stock of the company at par prior to August 1st, 1883, when presented in sums of fifty dollars. The stockholders will also have the option of subscribing at par to the stock of the company, in the proportion of four per cent of the number of shares registered in their names April 30, 1883. Those who are entitled to a fraction of a share can subscribe for a full share. All subscriptions must be made and paid for in full on or before June 15, 1883, as no subscriptions will be received after that date. The privilege of taking new stock may be sold by shareholders, and blank forms of allotments will be furnished upon application. The present capital of the company is $85,751,550; and these two privileges, if fully availed of by the stockholders, it is estimated will yield $5,145,093. To provide the remainder of the money necessary, a 4½ per cent collateral trust loan, due in 30 years, has been negotiated upon favorable terms. The aggregate value to the shareholders of the dividend and the two stock privileges is estimated at about five and one-half per cent.

The gross receipts of the Philadelphia and Reading Railroad

Company for the month of March, 1883, were $1,669,240.91, the expenses $978,497.64, and the net profit $690,743.27—a gain, compared with the corresponding month of last year, of $90,303.55; the gross receipts of the Coal and Iron Company were $1,160,483.12, the expenses $1,148,724.59, and the net $11,758.53—making the net profit of both companies for the month, $702,501.80, an increase of $47,053.17 as compared with the corresponding month last year. The profit of both companies for the first four months of the fiscal year, which commenced December 1, 1882, was $2,841,243.73, an increase as compared with the corresponding period of last year of $162,682,70.

The count of the money in the United States Treasury at Washington, which commenced on the 31st of March, was concluded on the 19th ult. The committee found the various sums belonging to the cash of the office to aggregate $13,469,297 53; the reserve, consisting of United States notes and certificates not yet issued, $75,440,218; United States bonds to secure public deposits with national banks, $16,849,000; United States bonds to secure circulation of national banks, $357,201,400; Indian and other trust funds, $4,418,716.

The value of the exports of breadstuffs from the United States in March, 1883, was $17,802,275, and in March, 1882, $12,414,906. In 3 months ended 31st of March, 1883, $49,410,862, and in same time of 1882, $35,567,623. In 9 months ended 31st March, 1883, $167,233,418, and in same period of previous year $147,711,538.

According to the report of the Chief of the Bureau of Statistics the total values of the exports of domestics, provisions, tallow and dairy products during the month of March, 1883, and during the three months ended March 31, 1883, as compared with similar exports during the corresponding periods of the preceding year, were as follows: March, 1883, $9,941,425; March, 1882, $7,993,329. Three months ended March, 1883, $30,050,303; three months ended March 31, 1882, $30,440,290. Provisions and tallow for five months ending March 31, 1883, $46,143,021; five months ending March 31, 1882, $48,103,255. Dairy products for eleven months ending March 31, 1883, $12,093,972; eleven months ending March 31, 1882, $17,456,313.

From the report of the Horn Silver Mining Company, of Utah, we learn that the output of the mine for the year ending December 30, 1882, was 44,782.13 tons of ore. The average assay was 37.8 per cent lead and 34.2 ounces silver per ton. Net tons of lead, 16,924.52; net ounces of silver, 1,551,870.11. The sales of lead amounted to $1,326,694.23; of silver, $2,010,125.77; ore, $32,879.87; receipts from all sources to credit of mine, $3,385,811.68. The cost of mining was about $4.44 per ton, or $209,805.08; smelting, $788,048.02; refining, $145,405.13 (about $9.05 per ton); freight on bullion and ores to Salt Lake, $287,168.70; total payments on account mining, smelting, refining and all working expenses, $1,800,230.92. The balance to the credit of the mine January 1, 1882, was $294,195.40. Dividends paid in 1882, $1,200,000. Material on hand at 'Frisco, Francklyn and Chicago, December 31, 1882, $64,620.15; accounts due company, $536,194.91; construction payments, $32,313.71; Utah Central Railway Company, open account, $1,744.57; cash on hand, $44,902.82. The total assets of the company (including bullion en route, $99,997,62; base bullion at Chicago, $39,980.42; in furnace, $22,893,83; lead shipped, $48,045.14; silver bars ready for shipment, $24,622.68; ore on hand, $109,220.79, and silver in Assay Office, New York, $47,742.24,) amounted to $1,137,297.29. The company is free from debt.

The stockholders of the Old Colony Railroad Company have voted to issue $500,000 in notes and bonds to meet maturing indebtedness, also to increase the capital stock to $12,000,000.

The returns published in the official journal show the total value of exports from Mexico for the last fiscal year to be $29,083,000. The value of exports to the United States was nearly $14,000,000, and of those to England $10,000,000. Half the exports were shipped from Vera Cruz. The exports of sugar and tobacco were valued at only $617,000.

The Camden and Amboy Railroad 6s of 1883 and the United Railroads of New Jersey 6s of 1883 having matured, have been replaced on the Philadelphia Stock Exchange list by the United Companies of New Jersey consolidated mortgage gold 6s and general mortgage gold 4s.

The capital stock of the Tionesta and Clearfield Railroad Company has been increased from $1,000,000 to $1,500,000, the proceeds to be used in completing the construction and equipment of the road.

Judgment was rendered in the Court of Claims at Washington on the 15th ult. in favor of the Chicago, Milwaukee and St. Paul Railway Co., for $17,585, being balance due on a contract for carrying the mails.

THE latest recorded sales of stocks and bonds at the New York, Philadelphia, Boston and Baltimore Stock Exchanges are as follows:

NEW YORK.

Atchison, Colorado and Pacific 1st, 90½; American Express, 92; Adams Express, 128; American District Telegraph, 30; American Cable, 69; Atlantic and Pacific inc., 32; do. W. D. 1st, 100; Alabama, Class A, 83; Arkansas 7s, Central R. R., 20.

Boston and New York Air Line pref., 84½; Burlington, Cedar Rapids and Northern, 81; do. 1st, 101¾; Buffalo, New York and Philadelphia 1st, 102¾.

Chicago, St. Louis and Pacific, 21; do. pref., 56½; Canadian Pacific, 61¾; Cairo and Fulton 1st, 109; Canada Southern, 65¾; do. 1st, guar., 98; Central Iowa 1st, 109; Central of New Jersey, 78½; do. conv. ass., 115; do. inc., 91½; do. 1st, 1890, 117; do. consol. ass., 116; do. adj., 104¾; Central Pacific, 74⅞; do. 6s, 114¾; do. Cal. and Oregon 1st, 104; do. San Joaq. 1st, 108½; do. L. G., 104½; Chicago and Alton, 132¾; do. pref., 140½; Chicago and Northwestern, 134; do. pref., 151; do. consol. coup. gold, 126½; do. 1st mort., 106; do. S. F. 5s, 101; do. S. F. 7s, 106; Chicago, Milwaukee and St. Paul, 104½; do. pref., 120¾; do. 7s, gold, 126½; do. 8s, 1st, 132; do. consol., 122¾; do. 2d, 101½; do. Southern Minn. div. 1st, 108½; do. La Crosse div. 1st, 119¾; do. Chicago and Pacific Western div. 1st, 95¼; Chicago, St. Paul, Minneapolis and Omaha, 49½; do. pref., 107; do. consol., 110; Chicago, Burlington and Quincy, 124½; do. consol. 7s, 128½; do. Iowa div. 4s, 87¾; Chicago, Rock Island and Pacific, 123½; do. 6s, 1917, 125¾; Cleveland, Columbus, Cincinnati and Indianapolis, 68¾; do. 1st, 121½; Columbia and Greenville pref., 67; Colorado coal and iron, 35½; do. 1st, 85¾; Chesapeake and Ohio, 21; do. 1st pref., 32¼; do. 2d pref., 23¾; do. cur. 6s, 52½; do. 6s, 1911, 101; do. pur. money fund, 115; do. 1st, Series B, 91¾; Columbus, Chicago and Indiana Central, 4¾; do. inc. reorganization certif., 74; Cleveland and Pittsburgh consol. S. F., 122¼; Cleveland, Painesville and Ashtabula 7s, 112; Chicago, St. Louis and New Orleans 5s, 106¼; do. 1st, 116¼; Columbus, Hocking Valley and Toledo, 1st, 83;

Delaware, Lackawanna and Western, 125⅞; Delaware and Hudson Canal, 109⅝; do. 7s, 1894, 115¼; do. 7s, 1891, reg., 115½; do. 7s, 1884, 104; Denver and Rio Grande, 45⅝; do. 1st, 110¾; do. consol., 99¾; Dubuque and Sioux City, 85½.

East Tennessee, Virginia and Georgia, 9¾; do. pref., 20¾: do. inc., 38⅞; do. 5s, 78¾; Elizabeth City and Northern 1st, 80; Elizabethtown, Lexington and Big Sandy 6s, 95; Erie 7s consol. gold, 126½.

Fort Worth and Denver 1st, 75¼.

Green Bay, Winona and St. Paul, 8½; Great Western 2d, 99¾; Gulf, Colorado and Santa Fe 1st, 113.

Houston and Texas Central, 75; do. 1st M. L., 109¾; do. gen'l mort., 99; Hannibal and St. Joseph, 43; do. pref., 94¾; do. 8s, consol., 105½; do. 6s, consol., 111¼.

Illinois Central, 144; Illinois Leased Line, 81; Indiana, Bloomington and Western, 29; do. 1st pref., 119; do. 1st mort., 89; do. Eastern div. 6s, 92⅞; International and Gt. Northern 1st, 108; do. coupon 6s, 87; Iowa Midland 8s, 129; Indianapolis, Decatur and Springfield 1st, 100.

Kansas Pacific 1st consol., 99; do. 6s, Denver div. ass., 106⅞; Keokuk and Des Moines 1st, 102½.

Lake Shore and Michigan Southern, 109⅞; Lake Erie and Western, 29; do. 1st, 100; do. inc., Sandusky div., 37½; Louisville and Nashville, 50¾; do. St. Louis div. 1st, 104; do. gen'l mort. 6s, 94⅞; do. consol., 115½; do. 2d mort., 100; Long Island, 67: do. consol. 5s, 97½; Louisville, New Albany and Chicago, 1st, 101½; Lehigh and Wilkesbarre consol. ass., 105.

Missouri 6s, 1888, 111¼; do. 6s, 1886, 108½; Michigan Southern S. F., 104 Mobile and Ohio 1st mort., 109½; do. 1st deben., 74; Milwaukee and Northern 1st, 97; Manhattan Co., 44¾; Manhattan Beach, 25; Memphis and Charleston, 42; Michigan Central, 93⅜; do. 7s, 123; do. 5s, 103; Missouri, Kansas and Texas, 30½; do. consol. 7s, 109½; do. 2d, 60; do. gen'l mort. 6s, 84½; Missouri Pacific, 104½; do. 1st consol, 105; Morris and Essex, 128; do. 1st, 134½; do. 2d, 114; do. consol., 124; do. 7s, 1871, 120; Marietta and Cincinnati 1st pref., 12½; Milwaukee, Lake Shore and Western pref., 46; do. 1st, 100; do. inc., 80; Mutual Union Telegraph, 20; do. 6s, 89½; Metropolitan Elevated, 81¾; do. 1st, 99¾; do. 2d, 85; Minneapolis and St. Louis pref., 59; do. 1st Iowa Ext., 118; Midland New Jersey 1st, 91¾; do. 4-5-6, 89¾.

Nashville, Chattanooga and St. Louis, 53½; do. 1st, 119½; New York Cen.

tral and Hudson River, 121¾; do. 5s, ext., 102¾; do. 1st coup., 130⅝; do. 6s, 1887, 107¼; New York, Chicago and St. Louis, 11½; do. pref., 26¾; do. 1st, 102 New York, Lake Erie and Western, 36; do. 2d consol., 99; do. 3d 5s funded 98; New York, Ontario and Western, 27¼; Norfolk and Western, 13; do. pref., 42; do. gen'l mort., 100½; Northern Pacific, 51; do. pref., 88⅛; do. 1st, 106¼; New Orleans Pacific 1st, 89¾; New York, Lackawanna and Western, 88¾; do. 1st, 116; New York, Susquehanna and Western, 8¼; do. pref., 21½; do. 1st, 81¼; New Central Coal, 13; North Missouri 1st, 120; New York, New Haven and Hartford, 181; New York and Erie 2d mort., 108½; New York, West Shore and Buffalo 1st, 80; New York and Harlem, 195; do. 1st coupon, 127½; Nashville and Decatur 1st, 116.

Oregon Short Line, 27; do. 6s, 99⅞, Ohio Central, 11¾; do. inc., 30; Oregon Transcontinental, 85¼; do. 1st, 95; Oregon Railway and Navigation, 140; Ohio and Mississippi, 34; do. pref., 105½; do. Springfield div. 1st, 118¾; do. consol. S. F., 117; Oregon Improvement, 84; do. 1st, 95⅞; Ohio Southern, 13; do. 1st, 82; do. inc., 32.

Peoria, Decatur and Evansville, 20½; do. 1st, 97; do. Evansville div. 1st, 100; Philadelphia and Reading, 54¾; Pullman Palace Car Co., 128½; Panama, 100; Pacific Mail, 41¼; Pittsburgh, Fort Wayne and Chicago, 134½; Pennsylvania Co. 4½s, 96; Pacific of Mo. 1st, 107.

Quicksilver, 8; do. pref., 43½.

Richmond and Danville, 64; do. deben., 71¼; do. 6s, 98½; Richmond, Danville and West Point, 35½; Rochester and Pittsburgh, 20¾; do. 1st, 106½; Rensselaer and Saratoga, 144¾; Richmond and Alleghany, 14; do. 1st, 80¼; Rome, Watertown and Ogdensburg 5s, ext., 70.

St. Louis, Alton and Terre Haute, 67; do. pref., 54½; do. 2d pref., 108½; do. 1st mort., 114; St. Louis and San Francisco, 33; do. pref., 54; do. 1st pref., 9; do. gen'l mort., 100⅞; do. 2d, class A, 100; do. C, 98; St. Paul and Duluth, 39; St. Paul, Minneapolis and Manitoba, 129; do. 1st, 108; do. 2d, 109; do. Dakota Ext., 1st, 108; South Carolina, 25½; do. 1st, 105; do. 2d, 99; do. inc., 67; St. Louis, Kansas City and Northern, R. E., 7s, 108; do. Omaha div. 1st, 108½; South Pacific of Mo. 1st, 105½; Southern Pacific of Cal. 1st, 104; St. Louis Iron Mountain and Southern 1st, 115; do. 2d, 108¼; do. 5s, 77; do. Arkansas Br. 1st, 110; do. Cairo, Ark. and Texas 1st, 109⅝; St. Paul and Sioux City 1st, 112.

Texas Central 1st, 107; Texas and Pacific, 39½; do. inc., L. G., 66; do. Rio Grande div. 1st, 83¾; Texas and St. Louis, 19; Toledo and Wabash 1st, 107; do. 2d, 99¾; Tennessee 6s, old, 40; do. compromise bonds, 44.

United States 4s, coupon, 119¾; do. reg., 119¼; do. 4½ coupon, 113½; do. reg., 113; do. 3s, reg., 103¼; Union Pacific, 96⅞; do. 1st, 115¾; do. S. F., 117; United States Express, 59; Utah Southern Ext. 1st, 101.

Virginia Midland, 30; do. inc., 62; Western Pacific bonds, 111.

Wabash, St. Louis and Pacific, 29½; do. pref., 46½; do. St. Louis div. 1st, 101¼; do. gen'l mort. 6s, 80¾; do. Chicago div. 1st, 82; Western Union Telegraph, 83½; do. bonds, 1900, 113; Wells Fargo Express, 124; Winona and St. Peter 1st, 108½.

BOSTON.

Atlantic and Pacific 6s inc., 32; do. blocks, 113¾; Atchison, Topeka and Santa Fe, 83¾; do. Trust 6s, 101¾; do. 7s, L. G., 112½; do. 5s, 85; do. 7s, Dutch stamp, 117½; do. 1st, 120.

Boston and Albany, 183; do. 6s, 12c; Boston and Maine, 157; Boston and Providence, 164; Burlington and Missouri River in Neb. 4s, 80½; do. 6s, non-exempt, 103¼; do. exempt, 113½; Boston and Lowell, 96½.

Chicago, Burlington and Quincy, 124¼; do. 4s, 86⅝; do. 5s, S. W. div. 80; do, 4s, Denver Ext. 84¼; do. 5s, 102; Connotton Valley, 2¼; do. pref., 3¼; Connecticut River R. R., 167¼; Calumet and Hecla Mining Co., 233; Connecticut and Passumpsic Rivers R. R., pref., 88; Chicago and West Michigan, 52½; do. 5s, 88; Cincinnati, Sandusky and Cleveland, 20; do. 7s, 103; Chicago, Milwaukee and St. Paul, Dubuque div. 7s 103¾; Cincinnati City 7.30s, 129⅝.

Detroit, Lansing and Northern, 82; do. pref., 113; do. 7s, 118.

Eastern, 43¼; do. 6s, 110¾.

Fitchburg, 125; do. 7s, 123; Flint and Pere Marquette, pref., 99½; Franklin Mining Co., 10¼.

Iowa Falls and Sioux City, 82.

Jackson, Lansing and Saginaw 8s, 1891, 113¼.

Kansas City, St. Joseph and Council Bluffs 7s, 111¾; Kansas City, Fort Scott and Gulf 7s; do. pref., 121; do. 7s, 112; Kansas City, Springfield and Memphis 20; do. 6s, 87½; do. blocks, 100; Kansas City, Lawrence and Southern 6s, 105.

Louisiana and Missouri River R. R., 13½; do. pref., 33; Little Rock and Fort Smith 7s, 91.

Metropolitan Horse R. R., 72½; Mexican Central, 19⅛; do. 7s, 70⅜; do. inc., 19; do. block No. 3, 91; Marquette, Houghton and Ontonagon, 46½; do. pref., 105; Massachusetts Central, 3.

New York and New England, 36⅝; do. 7s, 110¾; do. 6s, 102½; New Mexico and Southern Pacific 7s, 112¾; Northern, 112.

Old Colony, 140½; Oregon Short Line 6s, 98¾.

Pewabic Mining Co., 5; Pueblo and Arkansas Valley 7s, 113¾; Pullman Palace Car, 129¾.

Quincy Mining Co., 44¾.

Rutland, pref., 19; do. 5s, 63; do. 6s, 95¾.

Sonora 7s, 103.

Toledo, Cincinnati and St. Louis, 3¾; Toledo, Delphos and Burlington Branch inc., 12.

Union Pacific, 97⅛; do. 1st, 113; do. 8s, 115½.

Vermont and Canada, 18.

Wisconsin Central, 22⅝; Worcester and Nashua, 58.

PHILADELPHIA.

Allegheny Valley 7.30s, 123½; do. income 7s, 42; American Steamship Co. 6s, 105.

Buffalo, New York and Philadelphia, 15; Belvidere Delaware 2d, 103¾; do. 3d, 105¾.

Catawissa 7s, 123; Camden and Amboy mort. 6s, 1889, 109; Camden and Atlantic 2d, 113; Central Transp., 35¼; Chesapeake and Delaware Canal 6s, 80. Continental Passenger R. R., 100.

Delaware and Bound Brook, 136; do. 7s, 125¼.

Easton and Amboy 5s, 106.

Germantown Passenger R. R., 67.

Hestonville, Mantua and Fairmount Passenger R. R., 13½; Huntingdon and Broad Top Mt., 14½.

Lehigh Coal and Navigation, 43¾; do. 6s, 1884, 101¾; do. 6s, gold loan, 112¾; do. 6s, Railroad loan, 115¾; Lehigh Valley, 66¼; do. 1st mort. 6s, reg., 124½; do. 7s, 133; do. consol. mort. 6s, reg., 125; Little Schuylkill, 60.

Minehill and Schuylkill Haven, 64.

Northern Central, 56¾; do. 5s, series A, 99¾; do. B, 95¾; Northern Pacific, 51⅛; do.. pref., 88⅛; North Pennsylvania, 66¾; do. gen'l. mort. 7s, reg., 124,

Pennsylvania Canal 6s, 86½; Pennsylvania State 5s, 118½; Pennsylvania R. R., 57⅜; do. allotments, 7⅛; do. consol. mort. 6s, reg., 120; Perkiomen R. R. 6s, 103; People's Passenger R. R. 8; Philadelphia and Reading, 27⅛; do. pref., 32¼; do. deben. 6s, 70; do. scrip, 116¾; do. consol. 5s, 1st series, 75; do. 2d series, 63; do. gen'l. mort. 6s, coupon, 98¼; do. adj. scrip, 90; do gen'l mort. 7s, 103¾; do. conv. 7s, 75; do. income 7s, 94½; do. deferred income bonds, 20; Philadelphia and Erie 5s, 103⅛; do. 7s, 113; Philadelphia, Germantown and Norristown, 109; Philadelphia City 6s, 1903, 133; do. 6s, 1896, 129; do. 4s, 1903, 114; do. 4s, 1885, 104; Philadelphia, Wilmington and Baltimore, 4s, 94; Philadelphia and Trenton R. R., 191; Pittsburgh City Compromise 5s, 110; Pittsburgh, Cincinnati and St. Louis 7s, 122½; Pittsburg, Titusville and Buffalo 7s, 97.

Schuylkill Nav., pref., 16; do. 6s, 1907, 9; do. 6s, 1897, 108; Second and Third Streets Passenger R. R., 115; Susquehanna Canal 6s, 65.

Union and Titusville 7s, 98¼; United Companies of New Jersey, 192; do. consol. mort. 6s, 1901, 116; do. gen'l mort. 4s, 96.

Warren and Franklin 7s, 115; West Jersey R. R., 50; West Chester and Philadelphia 7s, 114.

BALTIMORE.

Atlanta and Charlotte Air-line, 68; do. 1st, 108¾.

Baltimore and Ohio, 1st pref., 129½; do. 2d pref., 127; do. 6s, 1885, 103¾; Baltimore City 6s, 1890, 115; do. 6s, 1900, 126½; do. 6s, 1886, 107¼; do. 6s, 1893, exempt, 117; do. 5s, 1894, 113¼; do. 5s, 1916, 124; do. 5s, 1900, 120.

Canton Co. stock, 52½; Central Ohio, 51⅛; do. pref., 54¼; do. 6s, 109½; Charlotte, Columbia and Augusta, 36; do. 1st, 111; Columbia and Greenville 1st, 104¾; do. 2d, 80½.

Georgia Pacific 1st, 86⅞.

Maryland Defense 6s, 103; do. 6s, 1885, 104; do. Relief 6s, 112; Marietta and Cincinnati 1st mort., 132; do. 2d mort., 105¾; do. 3d mort., 54½.

Norfolk Water 8s, 128; North Carolina State consol. 4s, 79; Northern Central, 56½; do. 5s, series B, 95½; do. 6s, 1885, 104½; do. 6s, 1900, 116; do. 6s, 1900, gold, 117½.

Ohio and Mississippi, S. F., 117¾; do. Springfield div. 1st, 118¾; South Side (Va.) 2d, 104.

Pittsburgh and Connellsville 7s, 122½.

Richmond and Danville bonds, 1885, 100¼.

Virginia and Tennessee 2d, 8s, 124¾; Virginia new 3s, 54½; do. consols. 36½; do. consol. coupons, old, 55¾; do. 10.40s, 33½; do. Peelers, 37½ do. peeler coupons, 42½; Virginia Midland 1st mort., 111; do. 2d mort., 108; do. 4th mort., 52½; do. 5th mort., 95⅝.

Western Maryland, 13½; do. 1st unindorsed, 110¾; Wilmington, Columbia and Augusta, 9c; do. 6s, 111; Wilmington and Weldon, 121½.

The report of the treasurer of the Wilmington and Northern Railroad Company, which was presented at the annual meeting of the stockholders held at Reading, Penn., on the 7th inst., shows that the gross earnings for the year ending December 31, 1882, were $339,092,66, the operating expenses $264,028.87, taxes $4,656.65, interest on bonds and redemption of branch bonds $12,091.38—leaving as net earnings the sum of $58,315.76. Compared with the previous year the gross earnings show an increase of $14,080.60. It was voted to accept the act of the Legislature authorizing the company to increase its indebtedness $100,000 for the purpose of building branches and sidings. The length of track, including branches, is 85 miles. The company own 16 locomotives and 146 cars of all kinds.

When the Iron Horse was a Colt.

THE Secretary of the National Exposition of Railway Appliances is in receipt of a letter from Mr. David Matthew, the builder and engineer of the first steam-drawn train on the Mohawk and Hudson Railroad, the first trip of which was made August 9, 1831. Mr. Matthew was in charge of the construction of the first three locomotives built in this country, not for experiment, but for definite business purposes.

The first two of these were built for the South Carolina Railroad Company, and their subsequent history is somewhat obscure. The third was the well known "De Witt Clinton," which made the trip from Albany to Schenectady on that memorable 9th of August. The late Thurlow Weed was one of the passengers on this train, there being fourteen in all, filling two coaches. These were ordinary stage-coach bodies, which permitted through the doors and windows a clear view of the passengers within, who, in the old drawing of the train, are seen sitting in pairs on each of the three inside seats, in solemn, stove-pipe-hatted dignity.

With Mr. Matthew's letter is a large card containing, besides explanatory printed matter, two photographs. One is of Mr. Matthew himself, showing a white-bearded bright-eyed, young-faced old man. The other, somewhat faded, represents the first train with its attendants and passengers.

This iron horse, in our fathers' eye a marvelous creature, benificent, but terrible, was indeed a colt. Small, loose-jointed, scrawny and weak compared with the shining, splendid collossus of the present day, whose swiftness shakes the earth and whose neighings fill the hills with thunder; but it was a genuine and renowned sire of a mighty line of descendants.

It will be interesting indeed to look upon the man whose hand gripped the reins of this historic steed in its first wonderful and victorious race. Mr. Matthew writes:

"You can say I raised the first shelter over engine-men in the world, and they are indebted to me for protection from sun, rain, wind, snow and from the showers of sparks, dust and smoke which come from the smoke-stack."

It is expected that Mr. Matthew will be in attendance at the Exposition, and thousands of railway men and others will be glad to see and talk with him.

National Railway Exposition Items.

A CABLEGRAM from Commissioner Peters, in London, to Secretary Talbott, states that seventeen cases of exhibits for the Railway Exposition were shipped on the 24th ult., by the steamer "Holland." Among these is the "Rocket," George Stephenson's first locomotive.

THE construction of the electric railway at the Exposition building has begun, and is being pushed rapidly forward. The dynamos which are to furnish the electricity have been shipped and will soon be here. It will not be many days before the experts in charge can make experimental tests of its efficiency. This will be the first electric railway ever operated in this country regularly carrying passengers. There will be two trains of light and attractive cars, one of which will be making the circuit of the track, about one-third of a mile, while the other is discharging and receiving its load of passengers. A pretty little station will be built in the northwestern portion of the gallery, with sufficient open space around it to accommodate spectators. The gallery is being strengthened with heavy timbers, and precaution will be taken to guard against the possibility of accident.

THE proper entertainment of the multitude of visitors who will attend the Exposition, and the various conventions of railway men to be held in Chicago during its progress, is being systematically provided for. A number of the leading business men of the city are co-operating heartily with the management to prevent the recurrence of the annoyances which befel visitors at a very large gathering held in Chicago a few years ago. It is proposed to open rooms at a central point in which a register will be kept of hotels, boarding-houses, restaurants, with scales of prices, etc., where visitors can obtain reliable information on all subjects which they would naturally require. The great interest in the Exposition manifested in all sections of the country will insure a very large attendance, and the action above referred to is both timely and necessary.

THE management have sent a competent florist into the Southern States who will ship a number of car loads of tropical and other plants, shrubs, etc., to the Exposition. These will be contributed by Southern railways, and be representative of the sections of country tributary to them. Large shipments of these exhibits will be made from Louisiana, Alabama and Texas, and several other States will be represented.

ALL the large glass tanks around the central fountain have been engaged by railways running into the fishing regions of the North and West to exhibit living specimens of game fish found along their lines. Several more would be filled by other roads if they could be obtained.

THE Knowles Steam Pump Works have removed their salesroom from No. 86 to No. 93 Liberty street—nearly opposite the old store—where extensive alterations and improvements have been made in order to accommodate their largely increasing business, more room and conveniences being required for exhibiting and handling heavy pumping machinery. They propose in future to keep in stock a more varied assortment of their improved steam pumps, air compressors, vacuum pumps, etc., than hitherto. During the past year their manufacturing facilities have been greatly enlarged, especially in building large water works steam pumps.

THE Geo. F. Blake M'f'g Co., having removed on the 1st of May to the large and commodious warerooms, Nos. 95 and 97 Liberty st., will carry a larger stock of Steam Pumps and Pumping Engines than ever before, and it is their intention to keep on hand a full line of all their specialties, which in their former contracted quarters they have been unable to show.

JOHN C. WELCH, 72 Beaver street, New York, and 85 Gracechurch street, London, has sent us his ingenious Table of Circular Desk and Movable Heading. This contrivance, which is convenient in size as well as in form, quotes the lowest and highest prices for each month of last year of leading stocks, staple products, value of money, foreign exchange, etc. It combines compactness, ease of reference and representative facts in such a way that the commercial and financial situation of any time last year can be recalled at a glance.

IN some places in Europe steel bars are used in preference to bells, supplanting them sometimes altogether in church steeples, and producing very pure, distinct and melodious sounds. An English writer even advocates their general use, on the ground that, while in point of sonorousness they are equal to the common bell, in certain other respects they are to be preferred to it. Their weight will be light in comparison with the ponderous objects they are to replace; they will not burden the steeple so much, and consequently will give more scope for architectural design; their winding and hanging up will not be so difficult, dangerous and expensive; they are not liable to crack, as is the case with bells, and are, therefore, adapted for use in any climate; they can also be operated by a simple mechanical contrivance. They are also much cheaper than bells.

THE Sutro Tunnel Company has increased its bonded debt $36,040, making the total debt of the company $982,962.52, exclusive of interest, which on the 1st of January amounted to $334,181.80.

Written for the AMERICAN RAILROAD JOURNAL.

About Locomotive Runners.

BY WILLIAM S. HUNTINGTON.

THE recent death of the venerable Peter Cooper carries one's mind back to the time when there was scarcely a locomotive engineer on the American continent. We now have at least 1900 in active service in the United States, besides some hundreds who have retired from the profession. The rapid development of the American railway system has brought to the front this most remarkable class of men, and as they serve the public in a position of greater responsibility than any other man living, a little time and space may be profitably be devoted to a consideration of some of the characteristics that enter into the general make-up of those remarkable men, their habits and requirements in the olden time as compared to the present, etc.

In the early days of railroading it was necessary that a locomotive runner should be a thorough mechanic, able to construct and repair the wonderful machine he was in charge of. This was necessary from the fact that none but the builder understood its workings, and he must needs superintend the repairs as well as its performances on the road.

After a time locomotives became more numerous, and repair shops were necessary, which were put in charge of the oldest builders and mechanics. The rapidly increasing demand for runners made it necessary to promote the oldest and most reliable firemen, until it became the established custom to recruit the engineers from the ranks of firemen. The latter, being the assistants of the former, soon come to a thorough knowledge of the machine and its workings, and could handle it on the road as skillfully as he who fashioned it. And for a quarter of a century the supply of firemen was drawn from farms and workshops, and as fast as experts were needed to preside at the throttle, they were selected; those of longest service having the preference, their other qualifications being satisfactory. These qualifications consisted of steady habits, a thorough knowledge of the construction of the machine, its management under all circumstances while on the road, good judgment and a cool head in cases of emergency. It was not necessary for him to be a practical machinist or a thorough scholar. If his engine gave out on the road, he could use all the tools within his reach as skillfully as the master mechanic were he present. If repairs were needed, it was taken to the shop, and if the runner was not needed on the road, he assisted in the repairs, which made him more familiar with the parts, and gave him something of a theoretical knowledge in addition to the practical which he had already gained. In this way he became master of the machine without serving his time as a machinist. He had to pass no soul-harrowing examination on matters not pertaining to his calling. His capacity was measured by the results of his efforts, and when they were satisfactory there was no other consideration. In some instances, in after years, the finest mechanics have left the shops to become runners, and others have been sent out for a time when the "old man" was temporarily short of a runner. In most all instances they proved lamentable failures as engineers, and the best runners then, as well as to-day, are promoted firemen. It is not meant to say that a machinist cannot make a good runner, but he must first have a road experience, and singular as it may appear, a young man who has served in the shop until he is a finished machanic, cannot as readily learn to handle a locomotive skillfully, as one whose experience has been solely on the foot board. Some of our best mechanics cannot be induced to run an engine which was built, re-built or repaired under their supervision on its trial trip, preferring to place it in the hands of a practical runner. To learn to handle a locomotive skillfully is like learning to play the violin. It requires a certain control of the nerves and an acuteness that can only be acquired by early practice, and the man who longs to become a first-class locomotive runner and spends too many of his early manhood days in other employment has lost his opportunity. There are instances of thorough mechanics making skillfull runners, but they are rare. Nor do all firemen make good engineers. There are hundreds of them who can never get above the ordinary duties of firemen, but are highly satisfactory in that capacity. Formerly a wide-awake young man of keen perceptive faculties and good judgment could take charge of a locomotive after firing a year or so, but the present practice on some roads is almost discouraging to the aspirant to the throttle. They must fire for several years; then several years running a yard engine; then a long time on a construction train, and finally on a way freight, after which they are promoted to a through freight; another raise takes them to a local passenger run; and if they servive all this they may possibly reach a through passenger train. Most of these roads require a year or more of service as brakeman before commencing as fireman. And as though all this was not enough, another feather is added in the shape of an examination for color-blindness. The length of time these men must serve in the line of promotion varies on different roads, but the shortest periods would consume a man's best days before he reaches a seat on the coveted engine. And it is not at all probable that these roads are provided with a class of engineers that are superior to those on roads which promote men according to their peculiar fitness for the position, regardless of the time served. It is not only right and proper, but it is a duty that railway officers owe to the public and themselves, to exercise the greatest care in the selection of locomotive runners. But they should always bear in mind that they are *not made—they are born;* and unless nature designed them for engineers, a life time devoted to training will not make them experts. Nature makes the engineer and he is fitted for his duties by training. He is born to the world a rough diamond as it were, and he must be polished by training and experience, but it is by no means necessary to wear him out in the polishing process to make him a model engineer. The locomotive engineer must not only be able to control his machine, but he must have perfect command of *himself* under all circumstances. Otherwise he is as a child in the hands of a giant and is in constant trouble from the most trivial happenings, many of which would have been averted by a control of all his faculties. If he is nervous, fidgetty and uneasy, he labors harder than his engine, and they both fail to perform their duties in a satisfactory manner, and the engine runs him. In order that a locomotive perform satisfactorily, it is necessary for the engineer to be always cool and self-possessed, and "let the engine do the work," while he superintends things.

The writer once knew a very fine mechanic who thought to improve his health by running a locomotive. He was an expert in the locomotive shop and had some road experience. He was given a light passenger run, but somehow he was generally behind time. When he found he was a little behind he would "fret and foam, worry and stew and perspire, and it broke him all up," as the boys had it in the round-house. He would drench the machine with oil, and yet there was always something "geting hot," and there was no end to his trouble and the trouble he gave others; but when in the shop he was at home; cool, calm and collected, and there he was master of the locomotive. The man who ran "opposite" to him left a farm, and after serving as fireman until he had become an expert in making flying switches and "kicking" cars about the yard without smashing things, and gained all the knowledge *necessary* for a skillful runner to know, he was promoted to the throttle. Nature had done its share for him and he was an engineer. He was always on time at "the tick" and there were no outward signs of excitement under any circumstances. He went about his duties as though he were a part of the machine and could not keep doing the right thing at the right time, and all without apparent effort. Train hands, station men, and residents along the line always calculated on his being on time, and never took the chances

of his being a second late. Snow drifts seemed as nothing in his way, and he was indeed a wonder as compared to the shop man. His cool, cheerful presence was refreshing to those around him, and it somehow impressed them with an idea that when he was around nothing could go wrong. He never spoke while on duty unless it was necessary, and then, in a gentle and impressive voice and manner, he crowded a great deal into a very few words. He sometimes gave rather snappish answers to strangers who would persist in asking all sorts of questions, but was usually good natured, civil and friendly, but wanted to be let alone when on duty, and was a fair specimen of the average American locomotive engineer.

They are a distinct type of men; made so by nature and the peculiarities of their calling. They never lose sight of the great responsibility resting on them, or of the danger that besets them on every hand, and "eternal vigilance" on their part is the price of their safety and that of the rest of mankind. In 1880, locomotive runners in the United States carried29 1 millions of tons of freight, and 270 millions of passengers; about equal to handling the entire population five times. And, according to statistics, the safest place for us mortals is aboard a passenger train. True, we have railway slaughters, but they are rarely the fault of the engineer; and on how many occasions have they laid down their lives to save the hundreds behind them, who were unconscious of danger? Strong, robust, honest, faithful to his trust, we place our lives in his hands. trusting to his skill, and there is no manlier man than the locomotive runner.

Constitution Club.

WITHIN a short time there has been formed in the city of New York, a new Club bearing the above name. We understand that no man is eligible for membership who is at present a National, State or Municipal officeholder, and whenever one of their own number accepts an office as above, he ceases to be an active member. While we are not disposed to question the right of any association to choose its own members, still we cannot help deprecating this wholesale ostracising of a class of men many of whom are ornaments to the age in which they live. Still, for the purpose of this Club, it may be the only safe way. For the benefit of our readers we print the following tract, which is being freely distributed by some members of this Club, a reading of which will better convey the spirit and aims of its founders.

THE AVERAGE CITIZEN.

Necessity for Organization.

THE AGGRESSIONS OF CORPORATE WEALTH ENDANGERING LEGITIMATE PROPERTY RIGHTS.

A FEW UNDISPUTED FACTS.

THE spirit of association has in all ages induced men to join together for either pleasure or protection, and the *Average Citizen* has from the earliest period played an important part in regulating the affairs of society. The merchants' associations or *guilds* of the middle ages have been called the bulwark of liberty because they withstood alike the assaults of barbarism and despotism.

The *frith or peace guilds* were a feature of English life from the seventh to the tenth century, and in the eleventh and twelfth centuries they extended over the continent; one of the most important was founded at Roeskild, under King Canute, for the suppression of the piracy of the vikings. Others, as in Schleswig, Artois, Fleisburg, etc., joined "*for the protection of right and the preservation of liberty, the hindering of violence and maintaining of peace by all means that law and custom allowed, even against kings.*"

The Guilds became of such importance that their laws grew to be that of the commune or city, and to them we are largely indebted for many of the principles of the common law which have withstood both the open assaults of power, the covert stabs of *Codifiers*, and are still the bulwark of individual rights as against corporate aggression.

Some may think that there is no longer any need for citizens to associate for the protection of their own and others' rights. We have not, to be sure, the robber barons of the middle ages who took toll with the strong hand from the caravans which passed through their defiles, but the ingenuity of the nineteenth century has largely monopolized the forces of the age and devised a system by which the production and commerce of a continent has been directed into a few narrow channels, not to say defiles, and, through the device of rendering a public service and under the forms of law, is tolled at will by our brainy barons upon the same principle the barons of the strong hand in the middle ages took toll—*what the traffic will bear.*

When and where has the world ever seen such aggregation of wealth as have been suddenly accumulated by the carrier taxing the producer and merchant and consumer?

And this result is not the worst feature; the means to the end are the most to be deprecated. The corruption of our elections, legislatures and courts—the undermining of the very foundations upon which our forefathers based our free institution—the spectacle exhibited to the young, of chicanery and fraud conferring the highest prizes of society upon its most unscrupulous and unworthy members. These are features of our modern life which suggest in the strongest manner a future, if not a present, for our country, "*Where wealth accumulates and men decay.*"

If any are disposed to question the truth of this picture let them consider a few undisputed facts. It is not disputed

That Gould, Vanderbilt, Huntington, Stanford, Sage, Field, etc., twenty years ago were comparatively poor men, and to-day these five are worth probably $500,000,000; and, through the corporations they control, wield the power of $3,000,000,000.

That they control absolutely the legislatures of a majority of the States in the Union; make and unmake Governors, United States Senators and Congressmen, and under the forms of popular government are practical dictators of the governmental policy of the United States.

That within twenty years two hundred millions of acres of the public lands have been given to corporations, equal to about four acres for every man, woman and child in the United States.

That this wealth and power have been acquired largely through bribery and corruption. Mr. Gould testified in 1873 that he contributed money to control legislation in four States, and it was proven that the Erie road, in a single year under his management, disbursed more than $1,000,000 for this purpose. His interference with the administration of our courts of justice is illustrated by his telegraphing United States Senator Plumb, asking him to support Stanley Mathews for the United States Supreme Court. And the striking spectacle was presented of Whitelaw Reid, editor of one of the leading Republican journals of the country, and Henry Watterson, editor of one of the leading Democratic journals of the country, lobbying on the floor of the United States Senate to secure Mr. Matthews' confirmation as Judge of the Supreme Court of the United States.

That because Senator Thurman was active in compelling the Pacific railroads, in which Mr. Gould was interested, to fulfil their contracts with the Government, that honest man and able statesman could not return to the United States Senate.

That E. D. Worcester, Treasurer of the New York Central Railroad, testified before the late Constitutional Convention of the State of New York that that road paid $205,000 one year and $60,000 another to obtain legislation, and that *it was obtained.*

That in the United States senatorial contest last year in the State of New York, a member of the Legislature stated that he had been given $2,000 to vote for a railroad candidate for the United States Senate; that he had given the money to the Speaker, and asked for an investigation. An investigation was

ordered and a State Senator and two lobbyists were indicted; but they have not been tried, and it is stated that corporation influence will prevent their trial, or if tried, secure their acquittal.

That in 1877 the railroad riots in Pittsburgh destroyed a large amount of property. The railroads refused to indemnify shippers, but endeavored to make the people of the State liable to the railroads. They tried to buy a bill through the Legislature saddling several millions of dollars upon the public. Their usual method of bribery was employed, but was detected, and E. J. Petroff, a member of the Legislature, with several accomplices, were tried and found guilty: but here political influence was brought to bear, United States Senator Don Cameron leaving his seat in the Senate and going home to look after things, *and they were pardoned.*

That last winter the railroads of New Jersey united in an effort to secure the entire water front of Jersey City under the specious guise of confirming the boundaries of a map. This infamous bill was such a flagrant disregard of public rights that the Governor, although elected by railroad votes, vetoed it. The Senate again passed it over the veto, but the Assembly hesitated, and bribery, the usual monopoly weapon in such cases, was resorted to. An investigation was ordered, and the committee reported that the bribery was fully proven, and that John J. Cromer was the man who did it. He has not yet been tried, and it remains to be seen whether Jersey justice is equal to the task of punishing a corporation briber.

That in March last two members of the Ohio Legislature were arrested for bribing others in the interest of a railroad company.

That the Congressional investigation of the Credit Mobilier swindle showed that $47,261,000 profit was made by a syndicate of Congressmen and other public men; and it is a well known fact that many of our public men have become very wealthy without any visible means of doing so.

That Congress is packed with corporation lawyers and other representatives of monopoly interests; measures in the interest of the people are retarded, smothered or throttled, while those in the interest of corporations are consummated without the slightest difficulty.

That public sentiment has for several years demanded the enactment of an adequate law for the regulation of inter-State commerce, but it has been postponed and throttled without the slightest consideration.

That the last Congress not only refused to restore to the public domain the lands which had been forfeited by the Northern Pacific Railroad, but on motion of Congressman Reed, of Maine, gag law was enforced, and Congressman Caswell, of Wisconsin, *tried to prevent the vote going on record.*

That a large portion of the public travel on free passes at the expense of the rest of the community, and a free pass issued by the New York Central Railroad is in the possession of the Anti-Monopoly League, which specifies that it was issued *on account of the Supreme Court.*

That a committee of the New York Legislature, Hon. A. B Hepburn chairman, after investigating the management of railroads in this State, used the following language: "Abuses" in railroad management exist "so glaring in their proportions as to savor of fiction rather than actual history."

That to perpetuate these abuses the perpetrators thereof are now seeking to control the thought of the nation. Leading journals are purchased with illgotten gains, and the ablest editors in the country are engaged to preach "peace on earth and good will to men" in one column, while misleading innocent investors and villifying patriotic citizens in the others.

In view of these facts is it not time that citizens were again associating in guilds to uphold right and put down wrong; to sustain the Constitution and the old laws which were adopted to secure freedom and equality for all men?

Never has there been a time during the past thousand years when there was more need of the services of the average citizen than at present. Financial freebooters sailing under the flag of law, have pillaged the people until they are almost ready to take up arms, and when that kind of a fight is once begun, who can tell where it will stop? The average citizen is the true conservator of property rights; he resists alike the assaults of the idle and vicious, and the aggressions of the unscrupulous and powerful. It is from the latter that the worst is to be feared at the present time, and our guilds must arrest the financial freebooters who are preying upon our industries and threatening our free institutions. Let us be citizens in the truest sense, and while diligent in business not forget our duties to our country—show that we are

"Men who their duties know,
But know their rights, and knowing dare maintain."

Recent Legal Decisions.

In Gribble vs. *The Pioneer-Press* Company, in the United States Circuit Court, district of Minnesota, Judge Nelson remanded a cause which had been removed to the federal court upon discovering on the argument of a plea to the jurisdiction that the plea was not removable. In the opinion he said: "It is without doubt the right and duty of the Court to remand a cause removed from a State court if it ascertains in any way that it was not removable under the law. This Court cannot be obliged to proceed with the trial of a cause with the knowledge that it is in fact within its jurisdiction, and either party may at any moment, by raising the question of jurisdiction on the record, put an end to the proceedings."

APPROPRIATION OF PAYMENTS.

There was sent to a superintendent of a railway company $5,000 to pay the laborers on the road, but the superintendent applied the money to the arrears of salary due him. The company sued him for this amount as money had and received to its use, and was beaten. It carried the case (Detroit, H. and S. W. Railroad Company vs. Smith) to the Supreme Court of Michigan, where the judgment was reversed. Judge Cooley, in the opinion, said: "Payment implies a voluntary act of the debtor looking to the satisfaction in whole or in part of the demand against him, but in this case there was no such act whatever. What was done by the defendant was in the face of the plaintiffs' instructions. A creditor cannot lawfully pay himself with the debtor's money without his consent, either expressed or implied, and when the debtor delivers money to the creditor to be applied to a certain purpose, the creditor's control is limited to the purpose declared. Such is the case here."

RAILROAD NEGLIGENCE AND PARENT'S NEGLIGENCE.

It was shown that a railroad company operated its train at a street crossing negligently, whereby a boy five or six years old, who had been sent across the track by his mother in company with an older boy on an errand, was injured. In an action for damages the plaintiff recovered, and the case—Galveston, etc., Railroad Company vs. Moore—was carried to the Supreme Court of Texas. The judgment was affirmed. Judge Stayton in the opinion said: "As to whether the negligence of a parent is to be imputed to an infant the opinions of the courts distinguished for their learning were widely at variance, and they are, perhaps, irreconcilable. The leading case in America for the affirmative in New York is Hartfield vs. Roper, 21 Wandell, 615, which has in the main been followed in other States. This line of discussion applies the rule whether the parent was present or not at the accident. The case of Robinson vs. Cone, 22 Vermont, 213, is the exponent of the negative of the proposition, and courts of other States have followed it. The English courts sustain Waite vs. R. R. Co., El., Bl. and El., 719, which limits the operation of the rule to cases where the parent or custodian is actually present and directing or controlling the action of the child; and to us this would seem to be the utmost limit to which the rule, in reason and upon sound principle, could be extended."

TRAMWAY DEPARTMENT.

[This department of the AMERICAN RAILROAD JOURNAL is devoted to the interests of Street Railways; and communications, suggestions and items of information relative to their organization, management and appliances are solicited by the editors. All communications should be accompanied by the name and address of the writer. The English nomenclature of "Tramway" is adopted in this department as being of greater convenience and more specific in its meaning than "street railway," though in allusion to individual organizations we shall preserve their corporate titles. It is our hope to nationalize the term Tramway, which is now generally used in every English speaking territory with the exception of the United States.]

THE opening of the East River Bridge is the coming event in the sister cities of New York and Brooklyn, and throughout the country will be regarded with the satisfaction and pride justly felt upon the conclusion of a magnificent undertaking, one of the greatest achievements of mechanical skill. To the readers of the AMERICAN RAILROAD JOURNAL, a perhaps more interesting occasion in the same connection, will be the starting of the cable car system on the great bridge, an event announced for about the middle of June. The success of the system in Chicago and San Francisco gives the assurance of its elegibility for use between New York and Brooklyn, especially as place is being found in the arrangements in progress, for the improvements invented by Colonel PAYNE, which make the system a practicable and effective substitute for the use of horses. The operation of the cable on the bridge will be viewed with the greatest possible interest by the street car companies of the two cities to be brought into rapid communication by its means. The use of a comparatively inexpensive substitute for horse-flesh, and one otherwise as efficient, would restore to the street car companies any advantage possibly lost to them by the completion of the elevated railroads, and would certainly insure to the public improved service in both the air and on *terra firma*. Possibly some readers are old enough to recall that among the many humorous productions having the introduction of the locomotive among modern appliances of transport as their subject, was one, published in London, which represented the noble horse reduced to indigence and ballad-singing for a living. Gaunt, wretched, his occupation gone, the unfortunate animal is represented as singing plaintive verses as the means of his support, lamenting the generous oats and careful grooming of his useful days. As the event of the general use of locomotives proved, the number and value of the horse increased in consequence, so we may be assured that the general employment of the cable in provision for street travel would not diminish the value of this noble quadruped in human service, but probably increase it. Meanwhile street car companies are interested in finding a less expensive means of locomotion than that effected by the muscles of the horse, and will, we are quite sure, appreciate the importance given in the department opened with these remarks, to the subject of traction by cable. The matter describing the inventions of Mr. WORCESTER HADDOCK, of Cincinnati, will be found both interesting and valuable.

THAT contemptible being, the surreptitious smoker on horse cars, should be put off without mercy. "No smoking" is an inscription familiar enough on the showy exterior of these indispensable vehicles; but what a "fib" it is, perhaps in most instances. While the weather is still cool, and the forward door of the car is kept closed, the presence of the smoker on the platform with the driver may be tolerated, but that of the sly puffer at the back of the car is an outrage on his fellow-travelers. Every reader knows this fellow, who manages to keep his "three-for-a-dime" alight by occasional whiffs, over miles of travel. Obedient to the conductor's injunction he holds his lighted cigar in his hand until that functionary has business within, and then proceeds to distress his fellow-passengers by keeping alive the consumption of his vile weed. His detection in this operation is as easy a matter as possible, and he should be compelled to leave the car for the comfort of those who have paid for a ride exempt from such a nuisance as he creates. The conductor understands what he is doing well enough, and his amiable regard for peace should not be allowed to interfere with the right of passengers to breathe air unpolluted with the vile smoke of a half-dead cigar.

ATTENTION is called to the propriety of improved ventilation in certain horse cars of antiquated construction still run on the Eighth avenue road of this city. This is a matter of great importance to the public health and comfort, especially as the warm season is about to begin. We submit that, for the general good, existing means of ventilation in said antiquated vehicles should be utilized to the utmost and supplemented with improvements in cases, if any, where these are necessary. It would certainly be cheaper to improve the ventilation of old cars than to build new ones to replace those of venerable years, which seem to be otherwise unobjectionable than as either wanting the means of providing passengers with wholesome air to breathe, or, by the oversight of persons sending them out, put on the street in a condition which does not admit of such provision being utilized.

THE process of time is developing considerable opposition to a scheme which, if carried out, would, it is alleged, damage incalculably one of the most beautiful and elegant portions of our sister city, Brooklyn. We refer to a project to construct and operate a cable railroad along Montague street from Wall street ferry to the City Hall. The consummation of this scheme would infallibly transform Brooklyn Heights from the site of homes of elegant privacy to a busy scene of merchandise. This transformation is deprecated by many persons who claim that while Brooklyn Heights as at present occupied is unapproachably eligible for elegant private residences, the expansion of commercial Brooklyn is equally eligible in other directions.

JOHN SMITH writes us that the most exasperating thing in his life is the getting a train on the "L" road a moment after commutation time. Everybody on board, he feels, is five cents ahead of him, and he has to hold on to the straps for half an hour while most of his fellow-passengers are comfortably seated, although he has paid double the rate for his accommodation that they have.

Proposed Broadway Arcade.

THE Broadway (New York) Arcade Railroad bill has passed the Assembly. Its projectors hope to get it through the Senate and approved by the Governor. Should they succeed they will begin the construction of the road in the fall. By their charter granted in 1881 they possess the right to lay a four-track railroad under Broadway. The present bill adds the right of laying sub-sidewalks and vaults for the reception of water, gas, steam, sewer and electrical pipes. Without these sidewalks the tunnel would be dark, ill-ventilated, and much less available for way travel. Its line is from the the Battery up Broadway to Twenty-third street, where it divides into two branches. One follows Broadway and the other follows Madison avenue, and they meet again at High Bridge. It is proposed to entirely remove the roadway and sidewalks of Broadway, and to substitute an artifi-

cial roadway supported on massive iron girders by frequent columns. The level of the roadway will be the same as the present level of Broadway. The sub-sidewalks will be immediately beneath the present sidewalks, but will be wider, as they will extend to the walls of the buildings. The present area openings will be left open for light and ventilation, and the upper sidewalk will be set with bulls-eyes. The lower roadway will be occupied by four tracks, of which the outer adjacent to the sidewalks, will be for way travel, and the inner for express travel. The tracks will have the ordinary gauge. Beneath the sidewalks will be large vaults, where all the various street pipes can be placed. Mr. Melville C. Smith, the projector, says there is no lack of money to carry on the enterprise. It will cost about $2,000,000 a mile. The London underground roads, which are similar, pay interest on $5,000,000 a mile. The work of removing the present roadway will not interrupt travel, as bridges will be so used as to obviate any disturbance. When finished the Arcade will not be a tunnel, but a regular street, well lighted and well ventilated. Stairways will descend to it from each street corner.

New York Elevated Steam Railways.

THE only railways of this class in operation in the State are the New York Elevated and the Metropolitan Elevated, both of which are leased to and operated by the Manhattan Railway Company. As described by the State Engineer and Surveyor in his annual report to the Legislature for the fiscal year ending September 30, 1882, these roads are virtually a succession of iron truss bridges resting on vertical columns of sufficient height to clear the streets. The number of miles of main line in operation at the close of the year named was 31.70; miles of branches, 0.71—total miles of single track on main line and branches, 32.41; miles of additional track, 36.60; miles of sidings, 10.66—total miles of track, 79.67. The equipment consisted of 219 locomotive engines, 610 first class passenger cars, and 20 cars for service. The number of miles run by trains during the year was 5,917,051; the number of passengers transported, 86,361,092; the average amount received per passenger, 6.86 cents, and the average cost of transportation per passenger 4.25 cents. The receipts during the year were: from passengers, $5,922,688.12; from mails, $5,000; from other sources, $45,945.29—total, $5,973,633.41. The expenditures during the same time were: for cost of transportation, $3,668,370.48; for interest, $1,364,080; for dividends, $589,942.50; for rental of leased lines, $20,000; for other items, $15,108.64—total, $5,657,501.62. The amount of capital stock issued was $26,000,000 (including $13,000,000 issued by the Manhattan Railway Company). The funded debt was $21,318,000, and the unfunded debt $1,647,639.35. The total cost of road and equipment was $34,882,790. The percentage of net earnings to cost of road and equipment was 6.61, and the percentage of total expenses to gross earnings 61.10. The average cost per mile for transportation expenses was $113,186.36; for maintaining road and real estate, $10,223.95; for operating road, $87,026.05; and for repairs of machinery and cars, $15,936.36. Average number of persons employed, 3,766; average number to each mile of road, 116.

Traction by Cable Across the East River Bridge.

THE reader is probably aware that the East River Bridge railroad will not be opened when the rest of the structure is, because experiments are to be made with the rope-traction power in order that all risk may be avoided. There are to be twenty-four cars, of which the most of them are already finished. They are light, airy, and comfortable. The cars are similar to those in use on the Sixth avenue elevated road, New York. There is so much glass about them that a superior system of brakes would be needed to prevent the bumping of the cars together, even if the sharp grades did not make them necessary. The grade is about one foot in one hundred, and the inertia of the cars after passing the centre of the bridge either way, would cause them to acquire an impetus, if unchecked, that would be disastrous before reaching the station. Hence three kinds of brakes are used, including the Westinghouse brake. In the event of a mishap to any one of the brakes, either of the others will be ample to control a car.

The cars will start from Brooklyn, and return by an opposite track, so that one track will be exclusively for New York business and the other for Brooklyn business. The system, which is called the circulating system, has been perfected regardless of expense. Its cost exceeds $350,000. The endless cable is operated by a 400-horse power engine near Prospect street, Brooklyn, and is 11,700 feet long. There will be an extra cable alongside, to be put into use in case of an emergency. The cars will be attached by a clamp made of two pulleys facing each other horizontally, and under the control of a lever which, moved in one direction, will release the grip of the clamp, and, in another, will tighten it. The tighter the clamp the swifter will be the speed of the cars. When the clamp is released the same movement will apply a brake to the wheels.

It is expected that four cars will be run over at a time, carrying, at a pinch, as many as four hundred passengers. The first car of the train will be attached to the cable. The cars will make through trips, and will not stop for way passengers. They will be switched from one track to another at the termini. Passengers will pass out by a stairway to be used solely as an exit. The distance to be traversed by the cars is a mile, and at the rate of speed which will be adopted, it is expected that the trip will be made in about four minutes and a half or five minutes. In the busy hours, the speed may be greater. It is calculated, however, that the trip will generally require five minutes.

Traction Rope Railways.

BY D. J. MILLER.

OF all devices yet introduced for the propulsion of street cars, the cable system seems most efficient and open to the fewest objections. In this we find the true principle of traction which is not to be found in any other method of street car locomotion. Although it has proved perfectly practicable, railway companies seem very dilatory in its adoption, as now nearly ten years have elapsed since the starting of the first cable street railway and but very few roads are yet in operation. As railway officials become acquainted with its superiority over the old methods and also of the increased traffic and percentage to be gained by the use of the cable system, no doubt the subject will receive closer investigation, and this may lead to its more general adoption.

A cable road can not fail to be a practical and financial success if mechanically constructed, but if poorly built the outlay for continual repairs may amount to more than the expense of running the cars by animal power. The cost of a well made road need be no more than for an inferior one, and may be less by receiving close attention from a skillful manager. The advantage of the cable system over that of animal traction is generally conceded, but objections are made to the original cost.

There is now a tendency on the part of railway companies to experiment on various constructions in hopes of discovering some plan by which the expense of construction may be reduced, and also to avoid patented improvements. This is to be regretted, as much time and money could be saved if willing to profit by others' experience instead of disregarding the same, and every failure to produce good results after large expenditure is apt to induce an aversion to the system, when if properly arranged and managed it would afford complete satisfaction.

The engineering required in planning and constructing a cable railway is as varied perhaps as in any work of modern times. Designing and arranging driving machinery and appliances along

the route for operating the cable, construction of iron work of which the road is almost entirely composed, arrangement of vaults in the streets for large sheaves, curves and shunting devices, street lines and street grades, and drainage for tunnel, together with many other details, probably presents as much variety of engineering work as is usually contained in any one enterprise, and this work should be planned and carried out on scientific principles. As the cable is one of the largest items of expense in operating a road, a short description of the same may be of interest.

The cable used on the Chicago roads has a diameter of one and one-fourth (1¼) inches, and the breaking strain is twenty-seven (27) tons. This rope is made of Swedish iron and is composed of six strands, each strand having nineteen wires, of which twelve are on the outside and the remaining seven on the inside of the strand. (The actual center of the cable is a small hempen rope.) As there are six strands, each having seven wires which are never exposed to wear, it will be seen that after those on the surface are badly worn and broken, there are yet forty-two (42) uninjured wires, and these alone will stand a strain of nearly ten tons, which is sufficient strength for the work, consequently a cable can be used for several months after the outside wires are all broken, but when in this condition it is a difficult matter to keep the spliced parts from separating unless the strands were well interwoven when the splice was first made.

The life of the traction rope depends very much on the arrangement of guiding and carrying sheaves, and when a rope is used on a straight line of road it will wear from six to eight times longer (speed considered) than when used on curves. The cable is bent to meet the small guiding sheaves when passing around curves, and although but a slight deflection is made, constant use soon breaks the wires, and this materially shortens its term of usefulness, but when employed on a straight line the surface wires will be all worn before the rope must be discarded. If a road is so constructed that the cable is actually worn out before it need be replaced then the greatest service is secured, but when the wires are merely broken and not worn, it is very evident that the construction is faulty. There is one first-class cable railway now in operation on which the cables cost at least twelve hundred ($1,200) dollars per year for each mile of single track, and if an arrangement such as we have recently seen had been used, having many sharp bends in the cables, the ropes would in all probability last not more than one-sixth of the time they now do, and the expense for cables reach a sum of about seven thousand ($7,000) dollars per mile, when it should not much exceed one thousand ($1,000) dollars.

The cost of this or that system is the question most discussed at the present time by railway men who are interested in the subject, and the cost should not be considered of paramount importance. Annual repairs and operating expenses, also durability of the construction, should receive as much study and attention as this item of first cost, as on these depend the percentage to be obtained from the investment. A large sum invested and paying a heavy percentage would give more satisfaction than a small amount at a small percentage, and one of the arguments in favor of the cable system is the heavy percentage realized from the outlay. It would be unwise to reduce the cost of construction if by so doing the operating expenses were to be increased.

Cable roads are yet in their infancy and it is reasonable to believe that a great many improvements will be made in the future, and also that the time is not far distant when street railway companies will find it to their interest to avail themselves of the many benefits accruing from the use of the cable system.

New York State Surface Street Railways.

The State Engineer and Surveyor, in his annual report on the Railroads of New York for the fiscal year ending September 30, 1882, which was transmitted to the Legislature on the 18th ult., says that the total miles of road constructed at that date was 460.70; and the miles of additional track, including sidings, 296.71 —making the total miles of track in operation 757.41. The number of horses and mules was 20,281; dummy cars, with engines, 40; passenger cars, 3,903; freight cars, 34. The number of passengers transported during the year was 277,171,345; tons of freight, 12,146. The average amount received per passenger was 5.119 cents; average cost of transportation, 4 cents. The total cost of road was $35,859,521.72, and the total cost of equipment $6,684,222.88. The amount of capital stock issued was $25,009,448.94; the funded debt, $17,605,136.61, and the unfunded debt $1,416,957.09. The receipts during the year were: from passengers, $14,189,171.48; from freight, $6,901.09; from other sources, $568,044.36—total, $14,764,116.93. The expenditures during the same time were: for cost of transportation, $11,086,242.11; for interest, $1,139,434.33; for dividends, $2,153,126.57; for other items, $66,644.45—total, $14,445,447.46. The average cost per mile for transportation expenses was $24,063,90; the average cost per mile for operating and repairs, $21,619.46; and the average cost per mile for maintaining road $2,444.44. The percentage of expenses to gross earnings was 75.09; and the percentage of net earnings on cost of road and equipment, 8.64.

New Improvements in Cable Street Railways.

The National Cable Power Company of Cincinnati, Ohio, is organized under the laws of the State, and is the owner of Worcester Haddock's patents for the United States. It was organized with E. M. Johnson, president, and Judge George Hoadly, secretary and treasurer. Mr. Worcester Haddock, of Cincinnati, is one of the directors.

That one of Mr. Haddock's inventions which relates to the class of street railroads in which an underground cable is employed for propelling the cars possesses advantages, among which may be mentioned the following: The box in which the cable travels, and the supports for the stringers being entirely of metal, there is no decay of material. The box, being cast or otherwise made in sections, does not require a large amount of excavation to place it in position. This is a very important feature in the construction of this class of railways, as by the Haddock mode of construction an ordinary street railway can be changed into a cable railway without interfering with the travel to any considerable extent, as the only excavating necessary is between the tracks, and just sufficient to contain one section of the box, which may be put in position and bolted to the sections already in position. This is not the case with cable roads as heretofore made, as the street must be torn up or blockaded on either side of the track in order to place the box or tube in position, and this entirely stops all the travel until the road is complete.

It often becomes necessary to examine the interior of the box at various points; and where Mr. Haddock's invention is used any part of the interior of the box may be examined without interfering with the street. The invention is applicable to various railways other than those before mentioned; as, for example, it may be applied to inclined planes and elevated roads. In the latter instance the box may easily be supported by the trestlework, and will be found as thoroughly operative as though it were in the ground. By the employment of this important invention it is practicable to construct any number of cross-tracks, and the cable in one track will not interfere with the cable in the cross-track. This result has not been heretofore accomplished, and is a feature of great importance, as at the present day, in cities of any considerable size, the street car tracks run in many directions, and in their course cross many other tracks, often at right angles and often at an acute angle. The mode in which the several parts at and near the point where the opening

of one track crosses the opening of another track is constructed enables the constructor to make a firm, strong track clear up to the said opening, said track being fully supported by convenient bearings. The aforesaid construction admits of the said portions being readily put together in the first instance, and readily removed and replaced and renewed in case of repair. Shoes or pieces may be cast solid with the box, or be made separate and bolted on. The various other parts attached to the sections of the box or tube may be separate and bolted fast; but the inventor prefers, for obvious reasons, to cast or form all in one piece with their respective section of the tube.

The invention, of which some of the advantages have been mentioned, is protected by letters patent No. 275,378, and the reader is referred to the specification for a detailed description of it.

Instead of the Bell-Punch.

M. W. MAHAR, of Soldiers' Home, O., has invented a fare-box to take the place of the bell-punch. The box is given to the conductor by the clerk at the office, and is carried by a strap suspended from the shoulders. It is presented to the passengers, each one of whom drops his or her fare in its mouth. The fare drops down into a glass-sided compartment of the contrivance, when the conductor presses a lever, the operation of which drops the fare into a box from which it cannot be removed without unscrewing the top from the device. If the contrivance be turned upside down a loose stop descends upon the inner end of a flat tube and prevents the egress of the contents. The top of the fare-box is fastened with a seal to prevent all tampering with it. When the box is returned by the conductor the proper person at headquarters breaks the seal and unscrews the top. The contents are then easily removable from the fare-box.

TRAMWAY NOTES.

THE Monumental City Railway, of Baltimore, which was sold by auction on the 8th inst. for $100,000 to Robert D. Morrison for a syndicate of Philadelphia and Baltimore capitalists, has about three and a half miles of double track inside the city and three and a half miles single track in the county, 14 cars, 66 horses, harness, etc., two dummy engines, stables and offices at Highlandtown, car sheds, etc. The purchasers, it is stated, will put money into the enterprise, get new cars, etc., and run the road on business principles. It is claimed that it will be made a first-class road.

THE North Chicago City Railway has 33 miles of track, 150 box cars, 100 open cars, 1,312 horses driven by 154 drivers. They averaged 158 conductors. There are 7 stable foremen, 14 watchmen, 120 grooms, 15 blacksmiths, 14 car builders, 9 painters, 2 harness makers, 20 trackmen, 7 teamsters, and 5 bridgemen—a total of 525. It carried 16,338,594 passengers during the year 1882. The total number of miles run by the cars during the same period was 2,960,867, being an average of 7,848 miles daily. The number of round trips made was 430,939.

A MAP has been filed in the Register's Office, Brooklyn, N. Y., of the route of the newly formed Prospect Park and Seaside Railroad Company. The route is from Fulton Ferry along the line of the Bridge and its Brooklyn approach to Prospect street, close by the Bridge entrance, thence in the line of the proposed extension of Flatbush avenue to Fulton street, and in Flatbush avenue, Butler street and New York avenue to the city line, and thence through the towns of Flatbush and Flatlands to the seaside.

A CORRESPONDENT writes that the best which can be said for advertising in street cars is, that it gives the public wholesome reading about compounds to expedite the family washing and to regulate the action of the liver, in large type and under conditions favorable to reflection. This, he maintains, is indubitably a good thing now that the doctors so generally forbid reading the newspaper while the car is in motion, and is a decided improvement upon people sitting and ill-naturedly staring at one another.

THE new Seventh Avenue Street Railroad, a branch of the Atlantic Avenue Line, was opened on the 30th ult. The cars run from Seventh avenue and Twentieth street, in Seventh, Flatbush, Fifth and Atlantic avenues, Boerum place, and Fulton, Adams and Front streets, to Fulton ferry, Brooklyn. The distinctive color of the cars is Portland amber. The stables of the line are at Twentieth street and Seventh avenue. The line is equipped with thirteen close and thirteen open cars.

THE obnoxious bob-tail car has at length been suppressed—or is about to be—on the lines of the Brooklyn City Railroad Company, and in future two-horse cars, with conductors, are to take their place. It is understood other companies in Brooklyn will follow the example, as the popular prejudice against the bob-tail in that city is very strong. But as for that, the popular prejudice against them is very strong everywhere.

AT a meeting of the sub-committee on street railways of Allegheny Councils on the 30th ult., a communication was received from the Pleasant Valley Street Car Company, stating that they would commence laying tracks on Charles street in a few days. The Union Line was granted the right to lay tracks on Spruce street.

THE first car of the Citizens Passenger Railway reached the borough of Sharpsburg on the 7th inst. The line now extends from Sixth street, Pittsburgh, out Penn avenue and Butler street, over Etna bridge to the furthest end of Sharpsburg. This is the longest of the Pittsburgh lines.

THE entire capital stock of $5,000,000 of the proposed Chicago Elevated Railway has been subscribed for by three men, viz: E. H. Spooner, $2,000,000; Wm. S. Pell, $2,000,000; R. M. Bacon, $1,000,000.

THE Mound City, Illinois, Railway is doing a good business, and a double team has been substituted for the single one that formerly hauled the passenger car.

THE Montreal City Passenger Railway Company have ordered the rule prohibiting smoking in any part of their cars to be rigidly enforced.

BROOKLYN is said to possess the best street car service in the United States.

A STREET car line, with cars pulled by goats, is to be established between Butte and Walkerville, Montana.

BOWERS, DURE & Co. have finished two new cars for the Wilmington City Passenger Railway Company.

A NEW street railway is being formed in Quebec to run between Lower Town and St. Valier toll-gate.

L. A. SENECAL has been elected a director of the Montreal City Passenger Railway Company.

The Hatchet Club.

"TALKING about wind," continued Eli Perkins, before the New York Hatchet Club on Washington's birthday—"talking about wind, I saw an ordinary quiet zephyr out in Kansas blow an iron bedstead seventy-eight miles, and the next day it came back after the sheets and pillows." (Sensation).

"But that is nothing, gentlemen, to a wind I ran against up in Minnesota. You see it had been blowing hard enough to blow the ears off of mules and the horns off of cattle for several days. (hear, hear). But that day I started from St. Paul to Minneapolis behind a span of mules. The wind struck the off mule—a zephyr from towards Duluth struck him when he had his mouth open and turned that mule completely wrong side out. (Sensation).

NEW INVENTIONS.

TO INVENTORS AND PATENTEES.

THIS department is devoted to the notice, consideration and description of new and valuable inventions applicable to Railroads, Steam Navigation, Machinery, Manufactures, Mining and Tramways. New patents of this description appearing in the weekly Official Gazette of the Patent Office are duly noticed in our columns, and full descriptions of those most useful and important are published *free of charge*.

☞ Inventors, Patentees, and the holders of Patents are requested to forward us their claims and specifications, with description of their inventions for our examination with a view to their publication in this department. Descriptive cuts, diagrams, and illustrations of the same are also desired.

☞ In selecting inventions for full description in this department, the editor will be guided solely by their importance and value, and their interest to the readers of the AMERICAN RAILROAD JOURNAL.

List of Patents for Inventions Relating to Railways, Tramways, Machinery, Etc.

BEARING DATE OF APRIL 10, 1883.

275,357. Dumping-Car: Nathan W. Condict, Jr., Jersey City, N. J. Filed Nov. 6, 1882.

275,376. Valve-Gear for Steam-Engines: Alpheus C. Gallahue, Rhinebeck, N. Y. Filed July 24, 1882.

275,378. Cable Street Railway: Worcester Haddock, Cincinnati, Ohio, assignor to the National Cable Power Company, same place. Filed Nov. 12, 1881.

275,379. Gripping Attachment for Cable Railways: Worcester Haddock, Cincinnati, Ohio, assignor to the National Cable Power Company, same place. Filed Nov. 29, 1881.

275,397. Passenger Car: Aaron Longstreet, Chicago, Ill. Filed Dec. 24, 1881.

275,401. Snow-Remover: Friedrich W. Menze, West Bay City, Mich., assignor of one-half to Karl Gustav Adolph Kusch, same place. Filed Dec. 9, 1882.

275,438. Car-Coupling: James Mortimer Terry, Pontiac, Mich. Filed April 27, 1882.

275,448. Grain-Car Door: Edward M. Wilcox, Omaha, Neb., assignor of one-third to James Morris, same place. Filed Dec. 6, 1882.

275,460 Car-Coupling Link: John Bridge, Detroit, Mich. Filed Oct. 18, 1882.

275,469. Signal-Lamp Guard: Samuel W. Corwin, Paterson, N. J. Filed Dec. 4, 1882.

275,513. Car-Brake: James B. O'Donnell, Hazleton, Pa. Filed Sept. 18, 1882.

275,518. Railway-Switch: John H. Quimby, Concord, N. H. Filed Jan. 23, 1883.

275,532. Dumping-Car: John Smith and John P. Rhodes, Rockville Centre, N. Y. Filed Sept. 21, 1882.

275,547. Brake-Shoe: James Timms, Columbus, Ohio. Filed Feb. 19, 1883.

275,570. Nut and Lock for the Same: William V. B. Blighton and D. Franklin Blighton, Tonawanda, N. Y. Filed Feb. 13, 1883.

275,599. Apparatus for Automatically Stopping Railway Trains: William C. Crandell, Jr., Philadelphia, Pa., assignor of one-half to Samuel D. Strohm, same place. Filed Feb. 25, 1882.

275,609. Railroad Express Indicator: James H. Dumont, New York, N. Y. Filed Dec. 27, 1882.

275,650. Car-Brake: Gustavos Heidel, St. Louis, Mo. Filed Jan. 25, 1883.

275,659. Eccentric and Strap for Steam-Engines: Nathan Hunt, Salem, Ohio, assignor of one-half to the Buckeye Engine Company, same place. Filed Feb. 12, 1883.

275,662. Car-Coupling: Calvin P. Johnson and Samuel T. Walkley, Springfield, Mo. Filed Jan. 15, 1883.

275,711. Railroad-Switch: John T. Rigney, Baltimore, Md. Filed Oct. 28, 1882.

275,712. Car-Blind: Anthony Roelofs, Philadelphia, Pa. Filed Sept. 5, 1882.

275,717. Car-Coupling: Henry K. Sebring, East St. Louis, Ill., assignor of one-fourth to Charles W. Waughop, St. Louis, Mo. Filed Dec. 29, 1882.

275,720. Car-Coupling: James H. Simpson and John T. Wilson, Pittsburgh, Pa., assignors to Wilson, Walker & Co., (Limited,) same place. Filed Jan. 16, 1883.

275,721. Car-Coupling: James H. Simpson and John T. Wilson, Pittsburgh, Pa., assignor to Wilson, Walker & Co., (Limited,) same place. Filed Jan. 16, 1883.

275,725. Slide-Valve for Steam-Engines: Jesse M. Smith, Detroit, Mich. Filed Jan. 23, 1883.

275,728. Car-Tracker: Samuel J. Stewart, Philadelphia, Pa., assignor of one-half to William A. Levering, same place. Filed July 22, 1881.

275,735. Grain-Car Door: Winfield S. Voorhis and George H. Houser, Chicago, Ill. Filed Aug. 29, 1882.

275,739. Locomotive: Wm. T. Wells, Hackensack, N. J. Filed May 24, 1882.

275,754. Car-Coupling: James W. Cole, Huntington, Mass. Filed Oct. 11, 1882.

275,763. Device for Stacking Railroad-Rails, Lumber, etc: Stephen J. Guscott, Chicago, Ill. Filed Jan. 11, 1882.

275,781. Fare-Box: Michael W. Mahar, National Military Home, Ohio, assignor of three-fourths to John M. Patterson, Windfall, Ind. Filed Sept. 30, 1882.

BEARING DATE APRIL 17, 1883.

275,808. Tramway: Robert S. Cunningham, London, Charles V. Houssart, 72 Lichfield Road, Bow, County of Middlesex, and William May, 20 Broughton Street, Battersea, County of Surrey, England. Filed July 8, 1882. Patented in England Dec. 19, 1881, No. 5,556.

275,812. Locomotive Smoke-Box: James C. Farmer, Providence, R. I., assignor to himself, and Charles E. Ferreira, Quincy, Douglas A. Brooks, Braintree, and Charles H. Brown and Addison A. Reeve, both of Boston, Mass. Filed Aug. 9, 1882.

275,814. Car-Coupling: Albert Fischer, Detroit, Mich. Filed July 17, 1882.

275,830. Brake-Shoe: Robert Thomas King, Columbus, Ohio. Filed Feb. 21, 1883.

275,831. Brake for Locomotives and Tenders: Charles W. Laupher, Norwich, N. Y. Filed June 7, 1882.

275,839. Car-Coupling: Granville E. Medley, Hopkinsville, Ky. Filed Feb. 10, 1883.

275,852. Sliding Car-Door Hanger: Edwin Prescott, Arlington, Mass. Filed Jan. 15, 1883.

275,870. Car-Coupling: Alexander Story, Washington, Iowa. Filed Feb. 3, 1883.

275,879. Electric Signaling Apparatus for Railway-Trains: George M. Bedinger, Jr., Erlanger, Ky. Filed Oct. 11, 1882.

275,880. Car-Coupling: Robert Bigney, Copleston, Ontario, Canada. Filed Jan. 22, 1883. Patented in Canada Jan. 29, 1883, No. 16,214.

275,930. Car-Brake: Charles A. Millener, Deseronto, Ontario, Canada. Filed Feb. 21, 1883.

275,935. Sleeping-Car: Harry M. Neff, Denver, Colo. Filed Dec. 12, 1882.

275,943. Car-Coupling: Frederick A. Ray, Maryland, N. Y. Filed Nov. 24, 1882.

275,948. Car-Coupling: Walter D. Sandwich, Montgomery, Ala. Filed July 21, 1882.

275,991. Portable Railroad Dining-Table and Lunch-Case: Jno. M. Case, Columbus, Ohio, assignor of one-half to W. M. Kurtz, same place. Filed Sept. 20, 1882.

275,998. Stock-Car: Albert Chapman, Corunna, Mich. Filed Feb. 17, 1883.

276,005. Car-Coupling: Oliver S. Dale and Abram Barnes, Michigan City, Ind. Filed Feb. 28, 1883.

276,017. Car: John P. C. Foster, New Haven, Conn., assignor of one-half to Newell A. Thompson, Boston, Mass. Filed Feb. 19, 1883.

276,021. Electro-Pneumatic Railway-Signal: Oscar Gassett, Boston, Mass., assignor to the Union Switch and Signal Company, Hartford, Conn., and Pittsburgh, Pa. Filed Feb. 1, 1881.

276,025. Car-Coupling: John Goeltel and Edward T. Slayton, St. Paul, Minn. Filed Oct. 17, 1882.

276,038. Electric Railway-Signal: Stephen C. Hendrickson, Brooklyn, N. Y., assignor to the Union Switch and Signal Company, Pittsburgh, Pa. Filed May 13, 1882.

276,047. Car-Wheel: Wm. R. Jenkins, Jr., Bellefonte, Pa. Filed Nov. 27, 1882.

276,051. Method of and Device for Coaling Locomotive-Tenders while in Motion: Michael H. Lantz, Marionville, Mo., assignor of one-fourth to Nelson Thomas Clevenger, same place. Filed Sept. 12, 1882.

276,053. Stock-Car: Henry A. Lewis, Wichita Falls, Tex. Filed Dec. 14, 1882.

276,070. Railroad-Frog: Denison C. Pierce, Chicago, Ill. Filed Nov. 3, 1882.

276,075. Tramway-Locomotive: Joseph Quick and Joseph Quick, Jr., Westminster, England. Filed Aug. 14, 1882. Patented in England Dec. 20, 1881, No. 5,575.

276,077. Railway Coaling-Station: William H. Ridgway, Coatesville, Pa. Filed Nov. 27, 1882.

276,088. Lifting-Jack for Raising Railroad-Tracks: James W. Snapp, Jasper, Tenn., assignor of one-half to Milton W. Anderson, same place. Filed Mar. 7, 1883.

276,089. Switch-Lock: David H. Speer, Pittsburgh, Pa. Filed July 14, 1882.

276,110. Car-Coupling: George W. Whittington, Xenia, Ohio. Filed Dec. 9, 1882.

276,122. Metallic Brake-Beam: William Woodcock, Elizabeth, N. J. Filed Feb. 12, 1883.

276,141. Car-Coupling: Isaac I. Keely, Anderson, Ind. Filed Jan. 12, 1883.

BEARING DATE APRIL 24, 1883.

276,150. Feed-Water Heater and Smoke-Stack Combined: James Armstrong, Bridgewater, N. Y., assignor to Jane C. Armstrong, same place. Filed Feb. 3, 1883.

276,168. Car-Coupling: Jno. Fashing, Winfield, Kans. Filed Feb. 28, 1883.

276,183. Car-Coupling: Marion Jacobs, Sturgis, Mich. Filed Aug. 21, 1882.

276,195. Journal-Box: George Sargood and Frederick L. Hemmer, East Arlington, Vt. Filed Sept. 15, 1882.

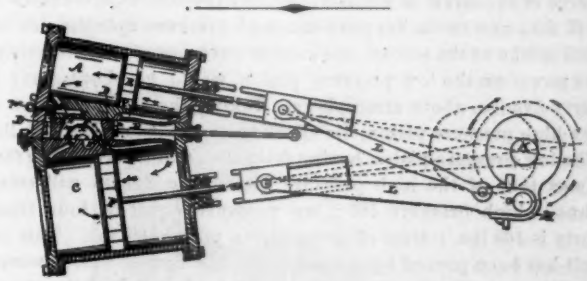
276,205. Car-Coupling: Lewis P. Whiting, Cleburne, Tex. Filed Feb. 23, 1883.
376,210. Car-Axle Box: William S. G. Baker, Baltimore, Md. Filed Feb. 27, 1883.
276,211. Car-Wheel: Marcellus O. Baldwin, Kansas City, Mo. Filed Nov. 14, 1882.
276,229: Car-Coupling: John E. Dickerson, Iberia, Mo. Filed Jan. 19, 1883.
276,239. Cable Railway: Andrew S. Hallidie, San Francisco, Cal. Filed Jan.
276,242. Railway-Rail: John F. Hanlon, Boston, assignor to George O. Hanlon and Joseph P. A. Hanlon, both of Cambridge, Mass. Filed Oct. 5, 1882. 2, 1883.
276,278. Signal-Lamp: Edwd. S. Piper, Toronto, Ontario, Canada. Filed Oct. 26, 1882.
276,322. Device for Rolling Railroad-Rails: Amos J. Acaster, Sheffield, County of York, England. Filed Feb. 1, 1883. Patented in England Dec. 24, 1881, No. 5,644.
276,358. Brake for Railways: Sutherland G. Colquhoun, Edinburgh, Scotland. Filed Sept. 22, 1882. Patented in England Mar. 18, 1880, No. 1,172.
276,370. Coupling for Brake-Rods: Edw. Ebl, Cedar Rapids, Iowa. Filed Mar. 9, 1883.
276,395. Snow-Plow: George A. Gunther, New Utrecht, N. Y. Filed Jan. 27, 1883.
276,414. Rail-Tie: Elias B. Hungerford, Corning, N. Y. Filed June 12, 1882.
276 428. Signal for Locomotive Head-Lights: Jno. Kirby, Jr., Ludlow, Ky., assignor to Post & Co., Cincinnati, Ohio. Filed Feb. 5, 1883.
276,452. Railroad Rail and Tie Elevator and Lifting-Jack: Truman C. Naramore, Williston, Vt. Filed Oct. 6, 1882.
276,441. Automatic Cash-Box System: Joseph C. Martin, Burlington, Vt. Filed May 22, 1882.
276,527. Nut-Lock: William M. Eccles, St. Louis, Mo., assignor of one-half to Isaac N. Byrns, same place. Filed Aug. 11, 1882.
276,545. Planking and Pavement. Samuel T. Williams, Red Bank, assignor of one-half to Andrew Albright, Newark, N. Y. Filed Dec. 15, 1882.

BEARING DATE MAY 1, 1883.

276,552. Revolving Switch-Stand for Railroads: Edward J. Beard and Howard V. Hinckley, Topeka, Kans. Filed Dec. 11, 1882.
276,554. Safety-Plate for Railroad-Switches: Aretus E. Black and Robert English, Marlette, Mich. Filed Dec. 9, 1882.
276,564. Safety Appliance for Railways: Albert G. Cummings, Harrisburg, assignor to the Pennsylvania Steel Company, Steelton, Pa. Filed Jan. 12, 1883.
276,569. Electric Railway: Leo Daft, Greenville, N. J. Filed Sept. 13, 1882.
276,592. Car-Door Fastening: William P. Jackson, Sedalia, Mo. Filed Dec. 29, 1882.
276,595. Stock-Car: Brantley P. Joiner, Florence, Ala. Filed Dec. 21, 1882.
276,644. Freight-Car Door: B. Frank Teal, Philadelphia, Pa. Filed May 11, 1882.
276,681. Car-Coupling: Henry Gross, Tiffin, Ohio. Filed Sept. 2, 1882.
276,712. Machinery for and Method of Manufacturing Steel Railway-Rails: Jacob Reese, Pittsburgh, Pa. Filed Nov. 7, 1882.
276,713. Fare-Register and Alarm: William J. Richardson, Brooklyn, N. Y. Filed Jan. 10, 1882.
276,716. Smoke-Stack: James Ritchie, Detroit, Mich. Filed Jan. 22, 1883.
276,727. Car-Wheel: William W. Snow, Ramapo, N. Y Filed Feb. 10, 1883.
276,762. Railroad-Switch: Thos. Breen, Knowlton, Pa. Filed April 22, 1882.
276,792. Railroad-Rail Joint: Joseph A. Eno, Newark, N. J. Filed Jan. 16, 1883.
276,794. Railroad-Switch: Albert T. Fay, Oak Park, Ill. Filed May 15, 1882.
276,801. Car-Signal: Robert P. Garsed, Norristown, Pa. Filed Mar. 30, 1882.
276,807. Electric Railway-Signal: Alvah W. Hall, Meriden, Conn. Filed Sept. 6, 1882.
276,814. Locomotive Head-Light: Arthur Harris, Chicago, Ill., assignor to J. McGregor Adams, same place. Filed Dec. 16, 1882.
276,872. Nut-Lock: John F. Penrod, Blairsville Intersection, Pa. Filed Dec. 22, 1882.
276,877. Spike-Extractor: Albert P. Prout, Wood Haven, N. Y. Filed Jan. 30, 1883.
276,878. Elevated Railway, Bridging, etc.: Louis T. Pyott, Philadelphia, Pa. Filed July 14, 1882.
276,900. Splice-Bar for Rail-Joints: Joseph S. Seaman, Pittsburgh, Pa., assignor to himself, James B. Young, and Robert Sleeth, all of same place. Filed Jan. 27, 1883.
276,904. Apparatus for Stopping Trains, Signaling, etc.: Wm. C. Shaffer, Philadelphia, Pa., assignor to the Railroad Safety Lock and Signal Company, of New Jersey. Filed Oct. 7, 1882.
276,905. Automatically Stopping Trains and Signaling: William C. Shaffer and Arthur M. White, Philadelphia, Pa., assignors to the Railroad Safety Lock and Signal Company, of New Jersey. Filed Jan. 2, 1883.
276,907. Locomotive-Cab Window: John Shields, Hancock, Mich. Filed Dec. 23, 1882.
276,928. Locomotive and Train Brake: Dolphus Torrey, New York, N. Y. Filed Mar. 20, 1882. Renewed Mar. 27, 1883.
276,930. Automatic Car-Brake: Dolphus Torrey, New York, N. Y. Filed June 29, 1882. Renewed April 13, 1883.
276,948. Tramway-Locomotive: William Wilkinson, Wigan, County of Lancaster, England. Filed May 18, 1882. Patented in England Oct. 1, 1881.
376,952. Refrigerator-Car: Samuel K. Bayley, Boston, Mass. Filed March 2, 1883.
276,977. Car-Coupling: Daniel Kunkel, Sr., Oregon, Mo. Filed Aug. 31, 1882.

BEARING DATE MAY 8, 1883.

276,999. Fender for Railway-Cars: Richard T. Bishop, St. Louis, Mo., assignor of one-half to Theodore Hunt, same place. Filed March 22, 1883.
277,000. Railway Sleeper and Chair: Thomas J. Bronson and Alexander Armstrong, Jacksonville, Ill. Filed Dec. 8, 1882.
277,034. Steam-Engine: Wm. E. Hil', Kalamazoo, Mich. Filed Aug. 10, 1882.
277,051. Car-Coupling: Charles P. Nicolson, Lamar, Mo. Filed Mar. 17, 1883.
277,098. Brake-Shoe: Warren M. Abbott, Chicago, Ill. Filed Mar. 12, 1883.
277,114. Car-Seat: Henry B. Cobb, Wilmington, Del. Filed July 13, 1882.
277,118. Apparatus for Operating Railway-Signals: Albert G. Cummings, Harrisburg, assignor to the Pennsylvania Steel Company, Steelton, Pa. Filed Mar. 12, 1883.
277,127. Automatic Car-Stove-Fire Extinguisher: James F. Gyles, Chicago, Ill. Filed Feb. 7, 1883.
277,130. Register: Joseph L. Harley, Baltimore, Md. Filed Jan. 23, 1883.
277,150. Refrigerating Chamber, Car, and Apparatus: Isaac Myer, Philadelphia, Pa., and Samuel K. Bayley, Boston, Mass. Filed July 13, 1882.
277,152. Car-Coupling: William Nunamaker, Kansas City, Mo. Filed March 10, 1883.
277,159. Brake-Shoe: David Prew, Providence, R. I. Filed Feb. 8, 1883.
277,200. Railroad-Signal: Walter C. Beckwith, Norwalk, Ohio. Filed Dec. 5, 1882.
277,242. Car-Coupling: Clarence C. Delano, Musson, La. Filed Aug. 16, 1882.
277,274. Car-Brake: Alfred E. Harris, Mile End Road, County of Middlesex, England. Filed Jan. 13, 1883. Patented in England June 6, 1882, No. 2,657; in France Dec. 5, 1882, No. 152,462, and in Belgium Dec. 7, 1882, No. 59,769.
277,275. Car-Coupling: Baldwin W. Harry and John C. Kieffer, Milton Centre, Ohio. Filed Feb. 27, 1883.
277,300. Car-Coupling: John C. Look, Yuba City, Cal. Filed Mar. 9, 1883.
277,302. Reversible Railway-Skid: Samuel Lowe, Denver, Colo. Filed Jan. 25, 1883.
277.333. Iron Cross-Tie: John Parr, Humboldt, Nebr. Filed Dec. 29, 1882.
277.336. Nut-Lock: James M. Perry, Sharon, Pa. Filed Feb. 19, 1883.
277,350. Dumping-Car: Charles Rohne and Johann Moenke, Hoboken, N. J. Filed Mar. 15, 1883.
277,358. Electric Signaling Apparatus for Railway-Trains: Fred. A. Shaw and Henry E. Judkins, Portland, Me.; said Shaw assignor to said Judkins. Filed Jan. 10, 1883.
277,360. Brake-Block: Manuel Joseph Siqueira, Brooklyn, Cal. Filed March 20, 1883.
277,363. Car-Coupling: Earl Sidney Smith, Chase, Mich. Filed Mar. 7, 1883.
277,379. Car-Coupling: Job Thigpen, Greenville, Ala. Filed Mar. 22, 1883.
277,382. Car-Axle Box: James Timms, Columbus, Ohio. Filed Feb. 19, 1883.
277,390. Circuit-Instrument for Electric Railway-Signals: Jos. Weis, Jersey City, N. J. Filed Aug. 16, 1882.
277,428. Locomotive: Oscar Rothrock, Beech Creek, Pa. Filed Feb. 17, 1883.
277,436. Car-Brake: Watson P. Widdifield, Uxbridge, Ontario, Canada. Filed Nov. 4, 1882.



Improved Compound Engine.

H. and W. Monk's recent invention in compound engines, patented the 27th day of February, 1883, consists in improved combination and arrangement of mechanism.

The high and low pressure cylinders are arranged in or about the same plane, but at an angle to each other. The piston rod of the large or low pressure cylinder is connected by a rod directly to the main crank. That of the small or high pressure is connected by a rod to the connecting rod of the large cylinder near the crank pin. By means of these arrangements the engine has

no dead centre. One valve chest for the high and low pressure cylinder is formed between the two cylinders, and one double-faced equilibrium valve is placed between the two port facings to regulate the admission of the steam, and exhaustion from both cylinders. This double valve is formed in two parts provided with parts and passages, and one part has a cylindrical projection which acts as a piston and fits a corresponding cylinder in the other part of the valve; the piston having suitable packing rings to keep it steam tight. The two parts of the valve are kept asunder with their faces against their respective port facings on the cylinders, by the action of springs being placed between them, and the pressure of the same on the margin of the valve; this double-faced valve being thus an equilibrium valve with only sufficient back pressure to keep both parts of the valve tight against their respective port facings. There is a small valve in the valve chest which can be opened and closed at will, for admitting steam from the valve chest to a passage which has a port coming opposite one in the main valve. By this means boiler or high pressure steam can be admitted when desired directly into the large or low pressure cylinder.

This engine is more particularly designed for locomotives. It has long been the study of mechanical engineers how to obtain better results by utilizing expansive force of steam on locomotives. It is a well-known fact that with the present arrangement of cylinders and slide valve operated by the ordinary link motion, it is impossible to admit and cut steam off early in the stroke of the piston, without withdrawing it or letting the exhaust escape too soon, and at a comparatively high pressure; for the average pressure of the steam when exhausted from the generality of locomotives averages from sixty lbs. to 100 lbs. above the atmospheric pressure. This shows a great waste of steam, for if its expansive force was properly developed it would have expended about double the energy utilized before its escape. Monk's Compound Engine will develop the full expansive force of the steam, and at the same time give a locomotive using their cylinders many other advantages. In a locomotive thus provided two cylinders, one valve, and valve chest are placed on one side of a locomotive, the cylinder and chest being so combined that they superheat each other, and the radiating space is greatly reduced, thereby avoiding the condensing of the steam. The cylinders and chest take up little more space than the ordinary cylinders used on locomotives. The high pressure cylinder will be less than half the size of the present locomotive's cylinder. The exhaust steam from this cylinder passes directly through the valve into the low pressure cylinder, which is four times the area of the high pressure cylinder. By this means the expansive force of the steam is utilized; for, say the boiler pressure to be 140 lbs., and steam supplied the high pressure cylinder for the full stroke of the piston, the average pressure of steam exerting its power on the low pressure piston would be about forty to forty-five lbs. above atmosphere. Taking the back pressure of the high pressure piston, its effective power would be 100 lbs. The low pressure piston having forty lbs., and its area being four times that of the high pressure piston, the figures will stand thus:—high pressure 100; low pressure equal to four times forty is 160 lbs.; total effective piston power 260 lbs. This result has been proved by the indicator. The figures will, however, deviate according to where the valve is made to cut off the steam. The valve is arranged so that it will cut the steam off early in the stroke of the high pressure piston and still let the exhaust escape into the low pressure cylinder to supply its piston with steam for the full length of the stroke. By this means the steam can be fully expanded and its energy properly developed. The cylinder being angled, one piston always travels slightly in advance of the other. Thus the full strain of both pistons is not put on the crank when it is on or near the centre, for one piston acts to counteract the other. The sudden shocks and strains which are now characteristic of locomotives when the crank is on or near the centre, are thus avoided. There is an attachment which connects with the ordinary reversing lever to a small valve in the valve chest, and it is only necessary for the engineer to put the lever right forward or right back, and boiler steam will then be admitted into the low pressure cylinder, which will give the engine a great extra power—equal to about twice the power of the ordinary locomotive. This power can be used to start a very heavy train, or to haul it up a heavy grade, or to work in a snow storm, or in case of the cylinders being broken on one side. The engine would in this case have the power to haul the train to its destination, for as the engine cannot be put on a dead point or center, and the low pressure cylinder being about twice the size of the ordinary locomotives, the engine would have this power. It is only necessary for the engineer to pull the reversing lever up one notch, and then the engine will be working the steam compound form. By adapting Monk's engine on locomotives the increase in weight and reciprocating motion is very slight. The cylinders and valve chest are so compact that they take up very little space; and as two pistons are connected to one crank, and one valve and valve motion operates steam into two cylinders, it does not complicate a locomotive in any form.

The general advantages obtained by using Monk's Cylinders are as follows: 1. A saving in fuel of about one third obtained by using the expansive force of steam; 2. A locomotive will travel nearly twice as far with the same amount of water used at present; 3. The blast will not be so strong, and sparks will be less liable to be thrown out of the stack; 4. There will be a great saving in smoke stacks, nettings, tubes, and fire boxes; 5. The valve being an equilibrium valve, the friction and strains on the valve and valve motion are greatly reduced, the engine will run more freely accordingly; 6. The engine always has a reserve power equal to twice that of the present locomotive.

Monk's engine will also work with efficiency in steam yachts, steam launches and steam tugs.

Its inventors are Messrs. H. and W. Monk, Hadlow, South Quebec, Canada.

Freight-Car Door Fastening.

This is a simple and inexpensive device recently patented, that when applied to the doors of freight-cars will entirely do away with the necessity for using all styles of fastenings now in use, including the cleating of doors, saving the cost of cleating, the time taken in putting them on, tearing them off, and the mutilation of cars.

FIG. 1.

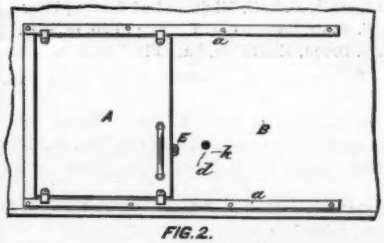


FIG. 2.

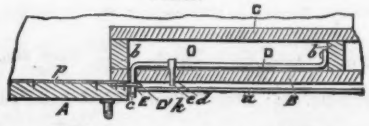


FIG. 3.

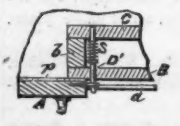
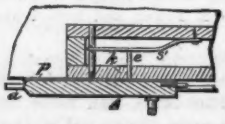


FIG. 4.



The device costs but very little if any more than the ordinary fastenings, is not at all liable to get out of order, and is automatic in its action in fastening the doors, closed tight and secure in place. As it cannot be damaged by freight in the car, nor from outside of the car, it should last as long as the car itself. The end of the bolt can be made of any shape, with a slot for seal, or to intersect with and form the bolt of a lock, or both.

Figure 1 is a front elevation view of a car-door to which this improved fastening device is applied. Fig. 2 is a horizontal sectional view of the same. Figs. 3 and 4 are sectional views, showing modifications in the construction thereof.

Similar letters of reference refer to similar parts throughout the several views.

In the accompanying drawings, A represents an ordinary sliding door of a freight-car, sliding on the customary rods or ways, *a a*.

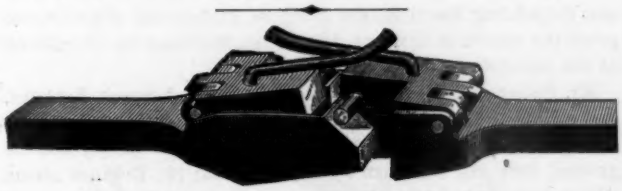
B is the side wall of the car, and C the inside lining or ceiling, with the space O between, formed by the upright pieces *b b*.

Within the space O, between the lining C and outer wall, B, is placed the fastening device D, which consists in a spring rod or bar, D, secured at one end to one of the uprights *b*, and the other end bent at right angles, and with the right angled part D' projecting through the wall B of the car, just behind the edge of the door A when said door is closed. Secured in the edge of the door by means of a wood-screw, or in any other suitable manner, is an eye, E, in which the projecting part D' of rod D enters when the door is closed. A short distance from the right-angle part D' on the rod D is attached the end of a push-rod, *e*, which projects through the side wall, B, by means of which the rod D may be pushed in, withdrawing the part D' from the eye E. The end of the part D' is provided with an opening, *c*, in which the customary seal or lock may be placed.

The device is intended to be placed on the side of the car-door in the direction in which it slides, and is operated as follows: The door being closed, the part D', by reason of the spring-rod D, enters the eye E, and the door is fastened. To open the door, press on the rod *k*, which withdraws the part D' from the eye E. The door A may now be slid open, and as it passes over the end of the part D' holds it back, flush with the side B. Upon pushing the door shut the part D' immediately springs out and fastens the door.

The device admits of many modifications, as shown in Figs. 3 and 4. Instead of the rod D, a straight bolt, D', may be used, which slides back and forth in bearings in the side wall, B, and lining C, a coil-spring, *s*, being used to press it outward; or, instead of the coil-spring *s*, a leaf-spring, *s'*, may be substituted, as shown in Fig. 4.

The Western Railroad Association having reported favorably on this patent, correspondence is solicited by the patentee, T. W. Cooke, Local Freight Agent C., B. & Q. R. R., Chicago.



New Passenger Car Coupler.

The above is an illustration of a new passenger car coupler patented by M. Peters, Jr., of Chicago. As will be seen the coupler is of two pieces, the pulling being of Bessemer steel cast into the top piece or draw-head. The coupler is at the same time a bumper.

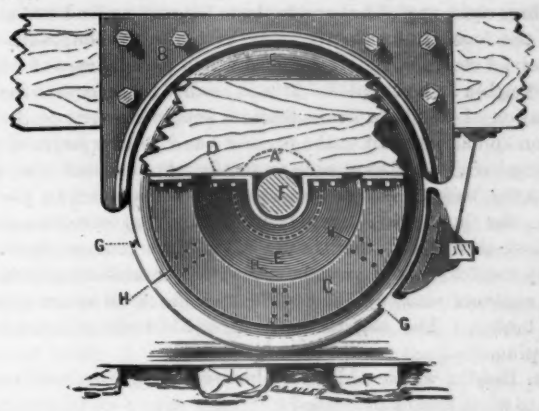
In case a car gets derailed it will disengage itself either from car ahead, car in rear, or from both by pulling out sideways. In case a car capsizes, it will disengage itself from the next car, as the two draw-heads will face and drop downwards and release the cars. The two former casualties excepted, the couplers cannot get disengaged from any motion to which trains are subject.

The only way to disengage them is by lifting either one of the draw-heads through the means of a chain, by which action the pulling pin of the one lifted will raise the draw-head of the other coupler as soon as it touches the cross-pin of the other to a certain extent, and release both couplers. As the widest part in the intersection is the middle it allows ample space to turn the shortest curves.

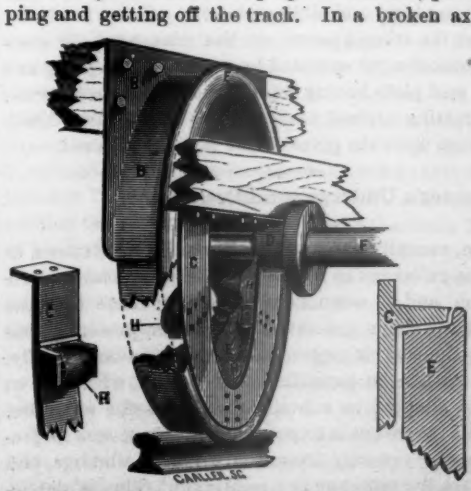
This coupler is worth the consideration of railroad men and car builders.

Raddin's Safety Attachment for Cars, and Train-Brake.

Mr. John Raddin, of Lynn, Mass., is favorably known for his invention of improvements aiding the safety and comfort of railway travel. Accompanying are cuts showing his Safety Attachment for cars. The public demand for faster travel is being met by the principal roads, and hence the necessity of providing greater security. Every reader will recall instances of the breakage of an axle or wheel involving disastrous consequences. The intention of Mr. Raddin's Attachment is to provide that a car fitted with it will run safely a reasonable distance—from twenty-five to fifty miles, certainly—after an axle or wheel is broken. As the cost of the Attachment is only about fifty dollars a car, time is well spent in its examination, as aided by the accompanying cuts.



Now ordinarily when an axle breaks, the opposite wheel will leave the track, as there is nothing to keep it on, and the wheel will drop and throw the car at right angles. The reader will remember an instance of this kind on the Boston and Maine Railroad, when a car thrown into the position indicated by the breaking of an axle, struck the truss of a bridge and knocked it down, costing the company a quarter of a million dollars. In Mr. Raddin's improvement, the axle being provided with collars A and boxes D, in case of breakage of either end it is held in position and will continue to run the same as though it was not broken. A plate B, secured to the truck frame, and coming down about half way on each side of the wheel, about three-eighths of an inch space between the wheel and plate, in case of the axle breaking the plate will drop easily on to the wheel and push it along with the train. The supporting plate C, with its rollers secured to the truck frame on the inside, to keep the wheel E plumb and the lip against the rail, preventing its tripping and getting off the track. In a broken axle or wheel, the



combination of plate B and supporting plate C, collar A, box D and broken axle F secured to the truck frame, it will be readily seen that either axle or wheel will continue to run without accident. The simplicity and cheapness of this device recommend it to those railroad men who have faith in the oft-repeated statement that their adoption of whatever

aids the safety and comfort of railroad travel brings a corresponding increase of business and profit.

Raddin's Train Brake is so constructed that no alteration is necessary to apply it to the Hodges or Stevens Hand Brake now in general use. It can be applied by the engineer by taking steam from the boiler and conducting it to a cylinder under the same. To connect either of the brakes with the locomotive, each car is provided with two sliding bars suspended on rollers, and are attached to the hand brake levers with a chain, permitting the brakes to be applied separately. The bars are coupled on the right hand side of the train, and connected to the piston of the cylinder. A sufficient number of cars are coupled to enable the engineer to bring the train under his control. Also, on a long freight train, the bars on the left hand side of the rear end can be connected and applied by the brakeman. To connect the bars right, apply the hand brake to the rear car, and straighten out the loose links, then couple the bars. To couple the cars closely, a coupling should be used which permits cars of different heights to be coupled. It will readily be seen that the application of Raddin's Train Brake is simply a matter of the addition and attachment to the present hand brake system of two sliding bars, provided at each end with couplers; and also, that when the bars are coupled and the power applied from the engine, the brakes are evenly, uniformly and simultaneously applied throughout the train. This Brake, uncoupled, will apply itself to cars of various roads in the middle of a train by the engineer slacking the engine, and the momentum applies the brakes. The engineer can back his train at once after stopping.

Mr. Raddin, whose address we have given, gives careful attention to all inquiries addressed to him.

Pursley's Car-Coupling.

THIS invention, by JOHN J. PURSLEY, of Wetmore, Kansas, is covered by two patents, the first dated December 19, 1882; and the second February 6, 1883. We may add that all railroad men who have seen it speak of it as well adapted to its purpose.

The claim protected by the first patent covers the draw-head and slotted metal plate in combination with the cone, said cone having an elongated channel, within which is pivoted a lever which operates the slotted plate, and the guide-tongue and coupling-pin whereby the cars are automatically coupled; the combination of the cone having the passage for the coupling-pin, and the elongated passage, having pivoted therein the lever, with the draw-head, having recess and channel, having working therein coupling-plate and pin; and the draw-head, in combination with the guide-tongue operated by the handle, coupling-pin, dome, working-lever and sliding-plate.

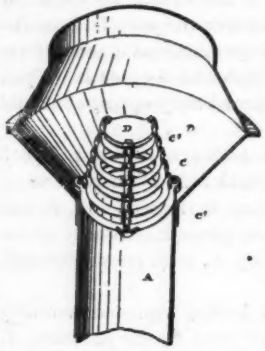
Claimed under the second patent are the draw-head, in combination with guide-tongue operated by a handle, the spring and coupling-plate, said plate having lug and hook-like projections, and bearing or resting against seats formed in the draw-head, whereby the strain upon the pivot of the plate is relieved.

Hunter's Underground Conductor.

THE invention, recently patented, of RUDOLPH M. HUNTER, of Philadelphia, has reference to underground conduits for electric wires in general, and it consists in providing these conduits with means to force air or gas into same under pressure, and adapted to keep the said air or gas under pressure continually, if so desired; further, in providing the conduit with one or more receptacles adapted to contain absorbents for moisture. The object of the invention is to provide suitable means to prevent the escape of electricity from the wires in underground conduits or reduce the escapage to a minimum. This is particularly necessary in the use of underground electric light wires, for on long circuits the lights on the farthest end of the line or circuit burn dimly and are incapable of giving that brilliancy of illumination for which they are designed unless the intensity of the electric current is greatly increased over the normal, and this is injurious to the lamps near dynamo-electric machines, and requires a greatly increased expenditure of power used in the generation of the current. By the use of Mr. Hunter's invention the distant lamps burn as brilliantly as those near the generators, and all burn with a maximum brilliancy without increasing the intensity of the current over the normal, and with a minimum expenditure of power. Said invention depends principally upon two phenomena—viz., the absorption of the moisture from within the conduit by chemicals to prevent undue escape of electricity, the moisture rendering the air in the conduit a good conductor, and increasing the pressure of the air or gaseous medium around the conductors and within the conduit, the same preventing the free escape of electricity from the wires. The greater the pressure and more free the air is from moisture the less liability is there for the escape of electricity.

Patterson's Spark Arrester.

THE accompanying illustration is of Patterson's Spark Arrester, lately patented in this country. MR. THOMAS PATTERSON, its inventor, resides at Stratford, Ontario, Canada.



His device relates more particularly to that class of spark arresters adapted for locomotive engines, and its object is to produce an arrester so effectual as to prevent the escape of any sparks large enough to set on fire material of the most inflammable nature. It consists essentially in placing at the junction between the smoke-pipe and bonnet a cone-frustum-shaped cage composed of a series of metal rings, reducing in diameter from the bottom ring to the top, where an inverted cone is placed to form a cover, the interior surfaces of the rings being fluted for the purpose of forming a grating to grind the sparks as they are driven into the cage by the action of the exhaust.

Mr. Patterson calls his invention the Chilled Spark Arrester, and claims the following as benefits derived from its use: (1) The sparks are ground up so fine that by the time they reach the ground they will not burn a blade of grass; (2) Engines steam better with it than with the old arrangement; (3) Engines will run about three hundred thousand miles before the cage is worn out; and (4) As all the pounding of sparks is done in the cage, the netting and stack will therefore last treble the time of those fitted with the old arrangement.

Given's Safety Guard for Railways.

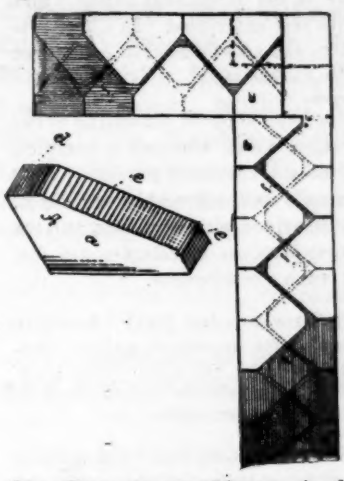
MR. PHILONZO F. GIVEN, of Cedar Rapids, Ia., has invented a safety-guard for railways, respecting which it is stated that with it properly in position, "no living man can fasten his foot so that it will not instantly come out." This being given as a fact the "touch of nature" prompts inquiry into the means devised by Mr. Given to prevent loss of life and maiming from pedal captivity on railroads.

The danger sought to be obviated lies at the end of the guard rails; and its prevention must be by means of a device extending back far enough, in frogs and switches, to allow the feet to pass freely between the rails. Generally described, Mr. Given's invention consists in a reversible elastic cushion, made preferably of rubber. The cushion is made thinnest along its middle longitudinal line equi-distant from the rails, and then gradually thickened on both its upper and under faces outwardly from

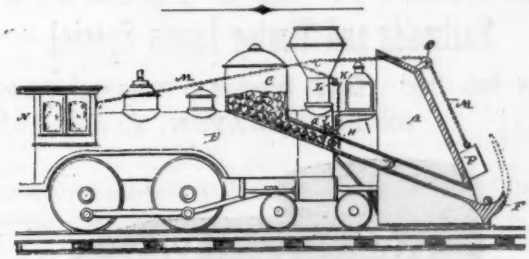
this middle line to the points where it comes in contact with the outer edges of the heads and with the upper faces of the feet or bases of the rails. From these points of contact it is extended to and is firmly abutted against their adjacent vertical faces. It is thus given a firm seat, from which it cannot be easily displaced, and at the same time possesses an elasticity by which it adapts itself to the pressure of and will not be subjected to great wear or liability to injury from the passing car-wheels.

A New Building Material.

Allen Ingalls, of Cooperstown N. Y., has invented a new and valuable mode of making material for constructing buildings of block or brick. By mixing sand, broken stone and cement, and cast in a mold, he has artificial stone of which houses, beautiful and durable, can be built. The blocks are laid in courses, each course consists of two rows of blocks, the tapering ends of the blocks in each row pointing inward, and the projecting tapering ends of one row entering the recess between the tapering projecting ends of the opposite row, the blocks being so laid that between the two rows of each course there extends a continuous zigzag air chamber or space. Thus the walls are traversed by an air chamber of very considerable area throughout its extent, while at the same time the blocks are bound as firmly together as though there was no air space. The U. S. Government has granted Mr. Ingalls the exclusive right to make, use and vend the said invention throughout the United States and territories.



Persons wishing to build houses or barns by using the above patent right, can erect a building beautiful and durable, at less expense than by any other means.



New and Unique Snow-Plow.

George A. Gunther, of New Utrecht, N. Y., is, we believe, the first to introduce an invention, the adoption of which by the railroad companies, particularly in the States and territories of the Northwest, would prevent, as it appears to us, the loss of a great deal of property and time from the storms which are apt to blockade the lines during the winter months. Methods of remedying the delay and destruction caused by these visitations have been used, but without the success which his new and unique way of dealing with blockading snow promises to make practicable.

Readers are aware that some twenty-five thousand miles of railroads in the United States are more or less injuriously affected by snow storms to an incalculable loss to the companies and the community. The ordinary snow-plow and shovel have not been found adequate to cope with a difficulty the magnitude of which is suggested by the fact that in October, 1881, the Chicago and Northwestern Railway Co. spent over three hundred thousand dollars in the fight against snow. Thirty-four immense snow-plows had plenty of work, and these were backed up tremendously by from two to six locomotives each. According to an account which appeared in the Appleton *Post*, one of these plows weighing forty-eight thousand pounds, ballasted by eighty thousand pounds of railway iron and driven by six locomotives, attacked a snow-choked cutting, but was defeated. Nine thousand men were employed from time to time during the winter of 1881-2 on the same line as shovellers.

Mr. Gunther's plan of dealing with the huge difficulty indicated in the above facts, is to explode torpedoes at the front of a plow to facilitate its entrance into the snow. The illustration gives a better idea than merely verbal description of the means he adopts to effect this. Torpedoes are fed to the anvil and exploded thereon by machinery under the control of the engineer.

We subjoin his claim as covered by letters patent from the United States Patent Office, No. 276,395. By means of the illustration the peculiarities of Mr. Gunther's invention are easily apprehended:

Claim—The method, substantially as herein shown and described, of loosening and removing snow and facilitating the entrance of a snow-plow into the snow, consisting in placing torpedoes or explosive cartridges on a snow-plow and exploding the said torpedoes, as set forth. 2. The combination, with a snow-plow, of devices for exploding torpedoes on the said plow, substantially as herein shown and described, and for the purpose set forth. 3. The combination, with a snow-plow, of devices for receiving torpedoes to be exploded on the said plow, substantially as herein shown and described, and for the purpose set forth. 4. The combination, with a snow-plow, of devices for receiving torpedoes and devices for exploding the said torpedoes, substantially as herein shown and described, and for the purpose set forth. 5. The combination, with a snow-plow, of devices for exploding torpedoes placed on the plow, and of appliances for operating the said devices for exploding the said torpedoes from the caboose of the locomotive, substantially as herein shown and described, and for the purpose set forth. 6. The combination, with a snow-plow, of devices for feeding torpedoes to the front of a snow-plow, and of devices for exploding said torpedoes, substantially as herein shown and described, and for the purpose set forth. 7. The combination, with a snow-plow, of a receptacle for torpedoes on a locomotive or car, a device for conducting the torpedoes to the front of the snow-plow, and devices for exploding the torpedoes, substantially as herein shown and described, and for the purpose set forth. 8. The combination, with a snow-plow, of the receptacle C on a locomotive or car, the anvil or lug F on the plow, the tube D for conducting the torpedo from the receptacle C to the anvil F, the chain M, and the block or hammer P, substantially as herein shown and described, and for the purpose set forth. 9. The combination, with a snow-plow, of the receptacle C on a locotive or car, the anvil or lug F on the front of the plow, the tube D, extending from the receptacle C to the anvil F, the block or hammer P, valves or gates in the tube D, and a chain or rope connecting the valves in the tube D, and the chain M, substantially as herein shown and described, and for the purpose set forth. 10. The combination, with a snow-plow, of a receptacle for containing torpedoes, a tube for conducting the torpedoes to the front of the plow, valves in the said tube, a block or hammer for exploding the torpedoes, and devices for raising the hammer and operating the valves simultaneously, substantially as herein shown and described, and for the purpose set forth.

The time is opportune, when the snow difficulty no longer exists and will not exist for several months to come, for companies interested in reducing the damage inflicted by it to a minimum, to acquaint themselves with an invention to this end obviously promising of profitable consequences in its use.

A Freight Car Coupler.

A new device for coupling freight cars, designed to lessen the risks of a brakeman's life, was exhibited in the yards of the New York, Lake Erie and Western Railroad Company, at Jersey City, on the 17th ult., by E. N. Gifford, the inventor, and J. B. McCormick, of the Cincinnati *Enquirer*, capitalist. As described: "A flat, cam-faced steel pin works in a slot in a bell-mouthed draw-bar in such a manner that the bottom of the pin rests at the foot of an inclined plane. When the link enters the mouth of the draw-bar it pushes the pin back and up the inclined plane until the bottom is so high that the link passes under it, when the pin drops through the opening in the link, seats itself by force of gravitation, and the coupling is made. Railroad representatives from all the lines running out of New York witnessed the test, and many of them were very favorably impressed with it.

A Summer Note Book.

We have received from J. R. Wood, General Passenger Agent Pennsylvania Railroad Company a small volume 5½x6½ inches, containing fifty or more pages, entitled "Cape May to Atlantic City"—designed more especially for the perusal of those who propose to patronize, during the coming season, the seashore resorts of the New Jersey Coast. It is very artistically gotten up, with a beautifully tinted paper cover, on which is a representation of a lady standing on the beach while the surf laves the sands at her feet, holding to her ear a conch shell through the medium of which she hopes to receive "A Message from the Sea." A vessel hull-down is seen in the distance, while the seagulls above are flapping their wings in the air. The attractions of the various summer resorts upon the shores of New Jersey are recounted under the captions of "The Invitation," "Cape May," "The Life Along the Shore," "Cape May to Atlantic City," "Rod and Gun," "Atlantic City," and "The Coast Climate," to which is added a chapter on "The Art of Traveling." The text, which is both entertaining and instructive, is interspersed with from twenty to thirty engravings descriptive of the attractions to be found at these visiting places. There are also instructions as to "How to Get There" and "Where to Stay." A page is devoted to "Hints to Bathers," while a map of "The Jersey Coast" closes the volume.

Sleeping Cars for the Canadian Pacific Railway.

Four elegant sleeping cars for the Canadian Pacific Railway Company have just been completed by the Harlan & Hollingsworth Company, of Wilmington, Del. They are named the Keewatin, the Assiniboine, the Qu'Appele and the Kaministiquia. They are each 58 feet long, 9 feet 10½ inches wide, and 9 feet 8 inches high in the center. The body of each car contains twelve berth sections, with all the latest improvements. Each berth is furnished with an improved woven wire mattress in addition to the ordinary hair mattress. Each car also contains a state room with a berth section, as well as linen closets, dressing rooms, heater room, etc. All the doors contain as panels mirrors of beveled plate glass. The windows have a double sash, and are each supplied with a spring roller curtain. The men's dressing room and the ladies' saloon are handsomely furnished and supplied with every necessary convenience. Each car is lighted by six double chandeliers of the Adams & Westlake pattern, and heated by a Searle's patent car heater, from which pipes run along the sides of the car and under every seat. The cars have end ventilation and pivoted transoms. They are supplied with the Miller platform. The trucks are of the Canadian Pacific Railway standard with six wheels each; the latter of steel and 40 inches in diameter. The cars are also furnished with French's elliptical and spiral springs and Westinghouse automatic air brakes, as well as double acting hand brakes. Their destination is Winnepeg, Manitoba.

An Instantaneous Light.

Such, in a word, is the unique apparatus on exhibition at the rooms of the Portable Electric Light Company, 22 Water street, Boston. It occupies the space of only five square inches and weighs but five pounds, and can be carried with ease. The light requires no extra power, wires, or connections, and is so constructed that any part can be replaced at small cost. The chemicals are placed in a glass retort; a carbon and zinc apparatus, with a spiral platinum attachment, is then adjusted so as to form a battery, and the light is ready. The pressure on a little knob produces an electric current, by which the spiral of platinum is heated to incandescence. The Portable Electric Light Company was recently incorporated with a capital of $100,000, under the laws of Massachusetts. Some of the prominent business men of the State are identified with this enterprise. In addition to its use as a lighter, the apparatus can also be used in connection with a burglar-alarm and a galvanic battery.

In Spain a railway train has been adopted consisting of two engines and twenty-four carriages, which contains a complete equipment for the reception, for a lengthened period, of eight officers and 136 men, and forms a little moveable war depot. The carriages are iron-clad and provided with loopholes, and the train carries four guns. Nervous Western travelers would feel very much relieved by having such a conveyance.

The commissioner of internal revenue has decided to return after the 1st of July checks and drafts imprinted with the two-cent revenue stamps when desired with the word "redeemed" stamped upon each check. This will enable banks and bankers to use the stamped checks after their redemption.

A man who knows the world will not only make the most of everything he does know, but of many things he does not know, and will gain more credit by his adroit mode of hiding his ignorance than the pedant by his awkward attempt to exhibit his erudition.—*Colton.*

Last Chance is the name of a new town on the Northern Pacific Railroad, 586 miles from Portland, Oregon.

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NEGOTIATOR AND PROMOTER.
Railroads and Timber Lands Special.
New Bonds Placed English Connections. Correspondence Solicited.
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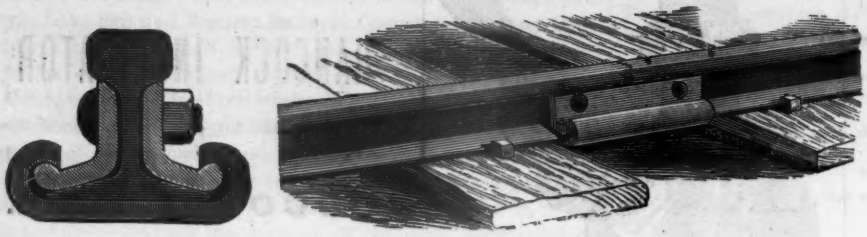

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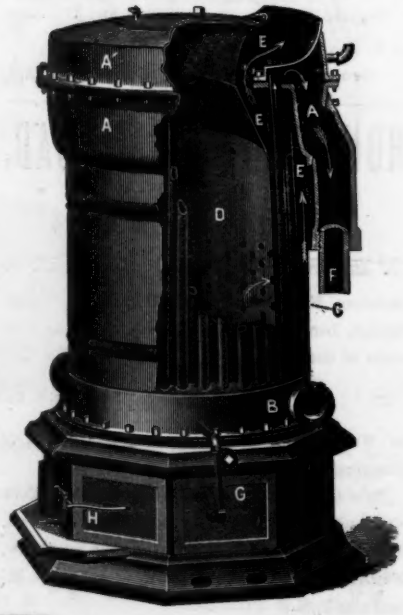

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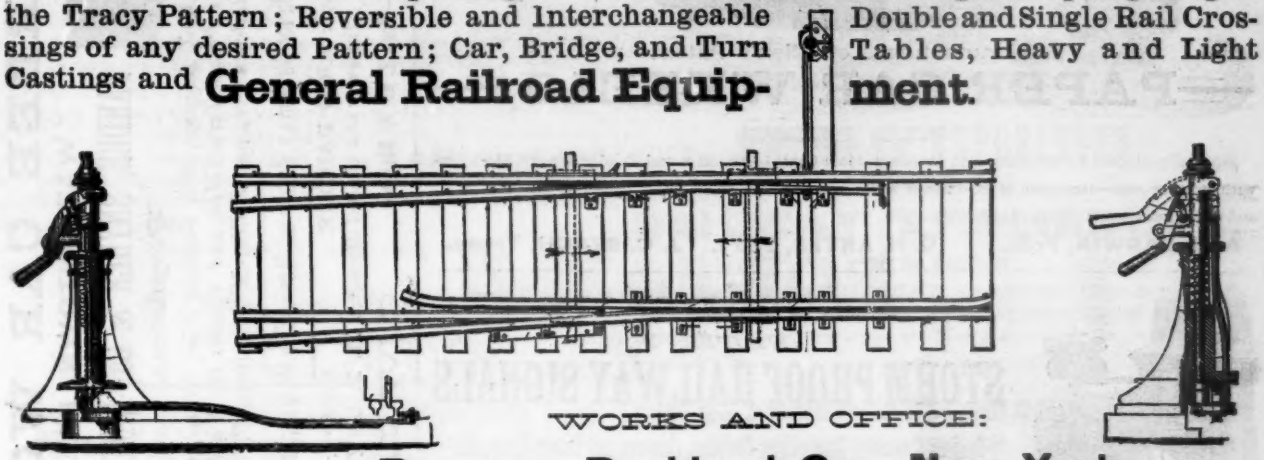

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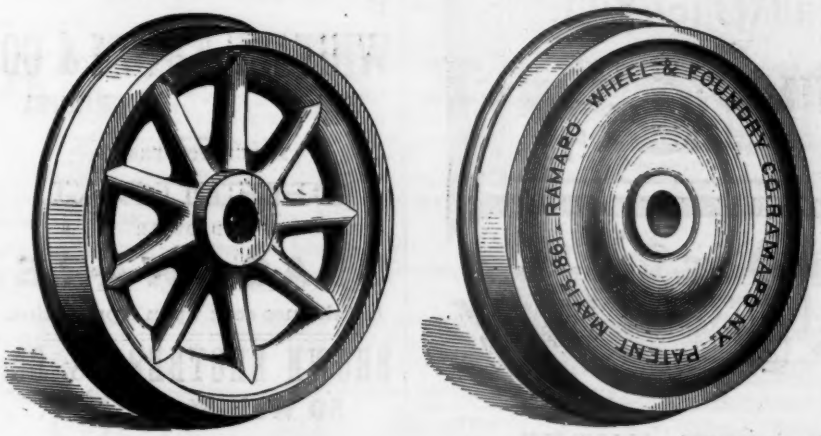

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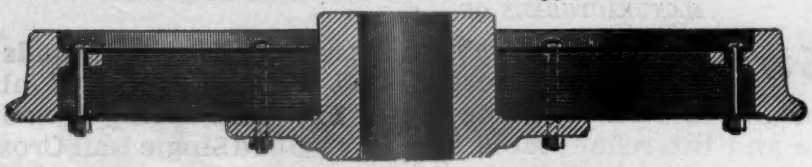

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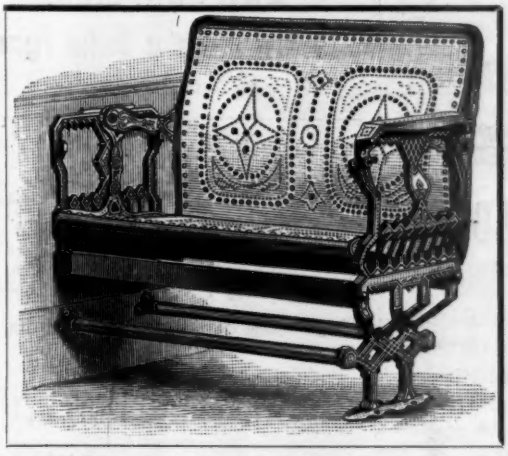

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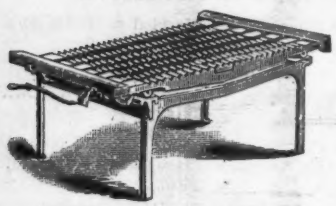

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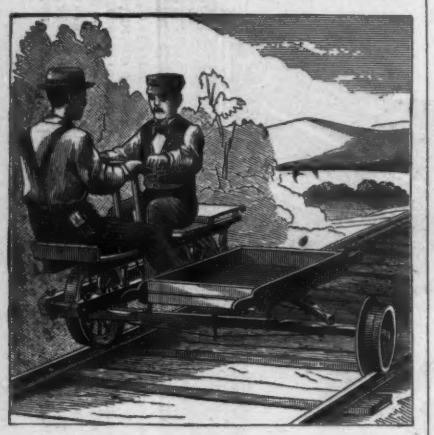

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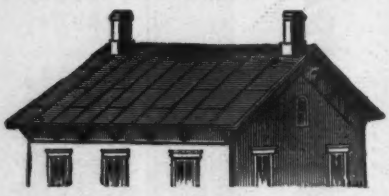

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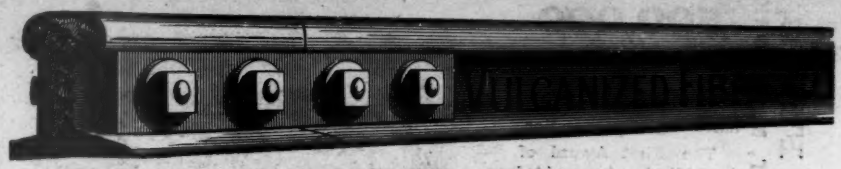

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